



5. 5,144,021, Sep. 1, 1992, Reticulated cellulose and methods and microorganisms for the production thereof; Ben-Bassat Arie, et al., 536/56; 435/252.1, 823 [IMAGE AVAILABLE]
6. 5,079,162, Jan. 7, 1992, Reticulated cellulose and methods and microorganisms for the production thereof; Arie Ben-Bassat, et al., 435/252.1, 101, 823; 536/56 [IMAGE AVAILABLE]
7. 4,863,565, Sep. 5, 1989, Sheeted products formed from reticulated microbial cellulose; Donald C. Johnson, et al., 162/150, 157.6; 428/369, 393, 913; 435/101, 823; 514/781; 604/289, 304, 308, 374 [IMAGE AVAILABLE]
8. 4,847,198, Jul. 11, 1989, Detection and indentification of **bacteria** by means of ultra-violet excited resonance **Raman** spectra; Wilfred H. Nelson, et al., 435/34; 356/301; 435/29, 173.1, 808; 436/63 [IMAGE AVAILABLE]
9. 4,446,370, May 1, 1984, Apparatus for detecting oil in water; John S. Gergely, 250/301; 73/170.29; 340/605; 364/420 [IMAGE AVAILABLE]

=> d kwic

US PAT NO: 5,573,927 [IMAGE AVAILABLE]

L2: 1 of 9

SUMMARY:

BSUM(9)

In U.S. Pat. No. 4,847,198, a system for the rapid detection and identification of **bacteria** and other **microorganisms** is disclosed. A beam of visible or ultraviolet light energy contacts a **microorganism** under investigation. A portion of the light energy is absorbed by the **microorganism** and a portion of the light energy is 'emitted' from the sample at a lower energy level. The emitted light energy (resonance enhanced **Raman** scattering) may be measured at any angle but preferably is measured as back scattered energy. This energy is processed to produce spectra which are inherently characteristic of the **microorganisms**.

SUMMARY:

BSUM(11)

In a preferred embodiment, the emitted energy measured is based upon ultraviolet resonance **Raman** spectroscopy. **Bacteria** under investigation are struck by an incident beam of light energy, typically a single wavelength in the ultraviolet range. The. . .

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DETDESC:

DETD(4)

The . . . invention primarily differs from prior art techniques is in the collection and use of back scattered energy, i.e. resonance enhanced **Raman** scattering from a **microorganism**. The invention will be described with particular reference to the following Example, which ~~Example is illustrative of and not a~~ . . .

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DETDESC:

DETD(12)

The . . . of the monochromator with a 35.0 cm focal length quartz lens 34. Because of the highly scattering nature of the **bacterial** samples, a filter was devised to exclude Rayleigh scattering. For this purpose a 0.7 mM solution of quinoline in 1.0M. . . entrance slit. The quinoline efficiently absorbs 2424 Å light while transmitting 40-50% of light in the range 247-260 nm (The **Raman** range). The average laser beam power at the sample was 2-3 mW. (A second monochromator or atomic line filter would. . .

CLAIMS:

CLMS(1)

Having described our invention, what we now claim is:

1. A method for determining the effectiveness of an antibiotic against a **bacteria** which comprises:

displaying **Raman** spectra of a first set of target cells of an initially cultured **bacteria** E. coli;  
culturing said target cells of a second set in a growth medium free of antibiotic;  
displaying the **Raman** spectra of the cells of the second set prior to mitosis;  
culturing said target cells of a third set in a growth medium containing an antibiotic of interest;  
displaying the **Raman** spectra of the target cells of the third set prior to mitosis; and  
displaying ribosome peaks and comparing the ribosome peaks. . .

=> d kwic 2-9

US PAT NO: 5,502,561 [IMAGE AVAILABLE]

L2: 2 of 9

DETDDESC:

DETD(121)

Information . . . The light (or other radiation) scattered, transmitted or emitted by the illuminated particle can be used with techniques including emission, **Raman**, ultraviolet, visible and infrared spectroscopies. Particles such as cells, **bacteria**, **viruses** and spores or portions thereof can also be stained to provide a fluorescence signal indicative of a chemical or a. . .

US PAT NO: 5,434,667 [IMAGE AVAILABLE]

L2: 3 of 9

DETDDESC:

DETD(127)

Information . . . The light (or other radiation) scattered, transmitted or emitted by the illuminated particle can be used with techniques including emission, **Raman**, ultraviolet, visible and infrared spectroscopies. Particles such as cells, **bacteria**, **viruses** and spores or portions thereof can also be stained to provide a fluorescence signal indicative of a chemical or a. . .

US PAT NO: 5,293,872 [IMAGE AVAILABLE]

L2: 4 of 9

SUMMARY:

BSUM(11)

In "Applications of Near-Infrared Fourier Transform **Raman** Spectroscopy in Biology and Medicine," Spectroscopy, Vol. 5, No. 7, pp. 24-32 (1990), Nie et al. disclose that fluorescence-free **Raman** spectra were obtained from pigmented squirrel eye lenses, normal and cataractous human eye lenses, intact bones and teeth, various woody tissues, human and chicken sclera, blood vessels, liver tissue, muscles, cartilage and tobacco mosaic **virus** using near-infrared Fourier Transform (FT) **Raman** spectroscopy.

US PAT NO: 5,144,021 [IMAGE AVAILABLE]

L2: 5 of 9

SUMMARY:

BSUM(20)

C-13 . . . distinct forms of cellulose I called I-alpha (I.sub.60) and I-beta (I.sub..beta.). These forms occur in plant-derived celluloses as well as **bacterial** and algal celluloses. The I.sub..beta. form dominates in plant-derived celluloses whereas the I.sub..alpha. form dominates in algal and **bacterial** celluloses (VanderHart and Atalla, Science 223: 283-284 (1984), and VanderHart and Atalla, Macromolecules 17: 1465-1472 (1984)). These forms cannot be distinguished by X-ray diffraction but are clearly distinguishable by solid state C-13 NMR and **Raman** spectroscopy.

US PAT NO: 5,079,162 [IMAGE AVAILABLE]

L2: 6 of 9

SUMMARY:

BSUM(20)

C-13 . . . distinct forms of cellulose I called I-alpha (I.sub..alpha.) and I-beta (I.sub.62). These forms occur in plant-derived celluloses as well as **bacterial** and algal celluloses. The I.sub.62 form dominates in plant-derived celluloses whereas the I.sub.60 form dominates in algal and **bacterial** celluloses (VanderHart and Atalla, Science 223: 283-284 (1984), and VanderHart and Atalla, Macromolecules 17: 1465-1472 (1984)). These forms cannot be distinguished by X-ray diffraction but are clearly distinguishable by solid state C-13 NMR and **Raman** spectroscopy.

US PAT NO: 4,863,565 [IMAGE AVAILABLE]

L2: 7 of 9

SUMMARY:

BSUM(20)

C-13 . . . forms of cellulose I called I-alpha (I.alpha.) and I-beta (I.sub.62). These forms occur in plant-derived celluloses as well as **bacterial** and algal celluloses. The I.beta. form dominates in plant-derived celluloses whereas the I.alpha. form dominates in algal and **bacterial** celluloses (VanderHart and Atalla, Science 223: 283-284 (1984), and VanderHart and Atalla, Macromolecules 17: 1465-1472 (1984)). These forms cannot be distinguished by X-ray diffraction but are clearly distinguishable by solid state C-13 NMR and **Raman** spectroscopy.



US PAT NO: 4,847,198 [IMAGE AVAILABLE] L2: 8 of 9  
TITLE: Detection and indentification of **bacteria** by means of  
ultra-violet excited resonance **Raman** spectra

ABSTRACT:

A **bacterial** suspension is contacted by a single wavelenght in the ultra-violet range. A portion of the light energy used is absorbed and a portion of the light energy is emitted. The emitted light energy, resonance enhanced **Raman** scattering, is measured as backscattered energy. The energy is processed to produce spectra which are characteristic of the **bacteria**.

SUMMARY:

BSUM(8)

The . . . invention is directed to a new method, and a system embodying that method, for the rapid detection and identification of **bacteria** and other **microorganisms**. The invention broadly includes a method wherein a beam of visible or ultraviolet light energy contacts a **microorganism** under investigation. A portion of the light energy is absorbed by the **microorganism** and a portion of the light energy is `emitted` from the sample at a lower energy level. The emitted light energy (resonance enhanced **Raman** scattering) may be measured at any angle but preferably is measured as backscattered energy. This energy is processed to produce spectra which are inherently characteristic of the **microorganism**.

SUMMARY:

BSUM(10)

In a preferred embodiment, the emitted energy measured is based upon ultraviolet resonance **Raman** spectroscopy. **Bacteria** under investigation are struck by an incident beam of light energy, typically a single wavelength in the ultraviolet range. The. . . reflected by the grating or gratings are plotted versus intensity to obtain a spectrum. The chemotaxonomic markers inherent in the **bacteria** are different for each **bacterial** type and these differences are reflected in the distinct spectra generated. With a known sample the characteristic spectra are plotted and these spectra, which are stored, are the `fingerprints` of that **bacterium**. When unknown samples are analyzed, their spectra are compared with the known spectra in memory to determine the identity of. . .

DETDESC:

DETD(4)

The . . . present invention primarily differs from prior art techniques is in the collection and use of backscattered energy i.e., resonance enhanced **Raman** scattering from a **microorganism** which exhibits characterstic spectra of that **microorganism**. The spectra observed reflect the differences in the composition among the organisms which allow the organisms to be readily identified.. . .

DETDESC:

DETD(11)

All test samples were composed of suspensions of **bacterial** cultures. Specifically, the **bacterial** suspensions were formed as follows Staphylococcus epidermidis ATCC 12228; Enterobacter cloacae ATCC 23355 and Escherichai coli ATCC 25922 were obtained. . . incubation at the proper growth temperatures for 24 hours. Experimental samples were obtained by inoculating a nutrient agar slant with **bacteria** and incubating the culture for 24 hours. B subtilis and P. fluorescens were incubated at 30.degree. C. The **bacteria** were then washed from the nutrient slants with 4-5 ml of sterile 0.85% saline. The **bacterial** density after dilution was approximately  $10^{8.8}$  -  $10^{9.9}$  organisms/ml. The excitation beam from the extender 18 was focused onto the. . . of the monochromator with a 35.0 cm focal length quartz lens 34. Because of the highly scattering nature of the **bacterial** samples, a filter was devised to exclude Rayleigh scattering. For this purpose a 0.7 mM solution of quinoline in 1.0. . . entrance slit. The quinoline efficiently absorbs 2424 A light while transmitting 40-50% of light in the range 247-260 nm (The **Raman** range). The average laser beam power at the sample was 6-7 mW. (A second monochromator would serve to exclude Rayleigh. . .

DETDESC:

DETD(18)

It is believed the spectra strongly support our claim that **bacteria** and other **microorganisms** can be rapidly detected and identified by means of UV-excited resonance **Raman** spectroscopy.

DETDESC:

DETD(20)

We have shown that with the five different types of **bacteria** excited at 242 nm at a power of about 5 mw characteristic resonance **Raman** spectra are exhibited which sensitively reflect differences in the compositions of these organisms. Nucleic acids, proteins and possibly isoprenoid quinones. . . reported. Fluorescence produced at energies below 270 nm by the organisms and associated media does not interfere with the resonance **Raman** signals since a "window" between the exciting frequency and the onset of fluorescence allows the sensitive detection of resonance-enhanced **Raman** scattered light. The higher the energy of the excited light within the **Raman** window (190-270 nm) the larger the "**Raman** window."

DETDESC:

DETD(23)

From . . . chemotaxonomic markers and the results shown in FIGS. 2-8, it is believed that at wavelengths between 190-260 nm characteristic resonance **Raman** spectra of **bacteria** and other **microorganisms** can be obtained. Depending upon chemotaxonomic relationships, different organisms, including pathogens i.e., disease causing **microorganisms**, will give characteristic spectra at empirically chosen excitation wavelengths between 190-260 nm. Spectra will reflect chemotaxonomic differences and will vary. . . such as on disc which can be rapidly scanned by a computer allowing rapid identification on the basis of resonance **Raman** spectra.

CLAIMS:

CLMS (1)

Having described our invention, what we now claim is:

1. A method for the identification of a **bacterium** which comprises:  
exciting taxonomic markers in a **bacterium** with a beam of ultra  
violet energy, some of said energy emitted from the **bacterium** as a  
lower resonance enhanced **Raman** back scattered energy;  
collecting the resonance enhance **Raman** back scattered energy  
substantially in the absence of fluorecence;  
converting the resonance enhanced **Raman** back scattered energy into  
spectra which corresponds to the taxonomic markers in said  
**bacterium**; and  
displaying the spectra whereby the **bacterium** may be identified.

US PAT NO: 4,446,370 [IMAGE AVAILABLE]

L2: 9 of 9

DETDESC:

DETD (7)

A . . . wavelength for exciting fluorescence in oil, while at the  
same time reducing unwanted fluorescence from interfering substances such  
as algae, **bacteria**, and **Raman** signals from water.

=> file jpo

FILE 'JPO' ENTERED AT 10:43:02 ON 01 OCT 1997

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* * * * *
*               G P I
*   J A P A N E S E   P A T E N T   A B S T R A C T S
* * * * *
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=> s 12

12201 BACTERIA#  
3470 BACTERIUM  
10939 MICROORGANISM#  
1897 VIRUS  
387 VIRUSES  
1436 FUNGUS  
1903 FUNGI  
693 RAMAN

L3 0 (BACTERIA# OR BACTERIUM OR MICROORGANISM# OR VIRUS OR VIRUS

ES

OR FUNGUS OR FUNGI) (P) (RAMAN)

=> file epoabs

FILE 'EPOABS' ENTERED AT 10:43:09 ON 01 OCT 1997

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* * * * *
*   E U R O P E A N   P A T E N T   A B S T R A C T S
* * * * *
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=> s 12

8321 BACTERIA#  
595 BACTERIUM

6482 MICROORGANISM#  
3729 VIRUS  
1476 VIRUSES  
619 FUNGUS  
1981 FUNGI  
437 RAMAN  
L4 1 (BACTERIA# OR BACTERIUM OR MICROORGANISM# OR VIRUS OR VIRUS  
ES OR FUNGUS OR FUNGI) (P) (RAMAN)

=> d

1. US 04847198A, Jul. 11, 1989, Detection and identification of  
**bacteria** by means of ultra-violet excited resonance **Raman**  
spectra; WILFRED H NELSON, et al., C12N 13/00; C12Q 1/04; G01J 3/44

=> .logoff y

U.S. Patent & Trademark Office LOGOFF AT 10:43:17 ON 01 OCT 1997

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OK  
ATHZ  
OK  
Trying 9158046...Open

box200> enter system id

Logging in to Dialog

DIALOG INFORMATION SERVICES  
PLEASE LOGON:

IALOG Invalid account number

DIALOG INFORMATION SERVICES  
PLEASE LOGON:

ENTER PASSWORD:  
717093fe

Welcome to DIALOG

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Dialog level 97.09.03D

Last logoff: 30sep97 17:31:46

Logon file001 01oct97 09:46:39

ANNOUNCEMENT ANNOUNCEMENT ANNOUNCEMENT

**\*New: Fuji-Keizai Market Research (File 508)**

**\*NEW: WORLD REPORTER (File 20)**

**\*New: Thomson/Polk Banking Database (File 324)**

**\*New: Education Abstracts (File 437)**

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**\*New: Applied Social Sciences Index and Abstracts (File 232)**

**\*New: Asian Business Market Research (568)**

**\*New: Espicom Telecommunications/Power Reports (512)**

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\*File 65: Alert profile charge now free. Monthly Alerts now available.  
Please see HELP NEWS 65.

File 94:JICST-EPlus 1985-1997/Aug W2  
(c)1997 Japan Science and Tech Corp(JST)

\*File 94: Monthly Alerts now available.  
Zero profile charges on Alerts--see HELP NEWS94 or HELP RATES94.

File 161:Occ.Saf.& Hth. 1973-1997/Q2  
(c) Format only 1997 Knight Ridder Info

File 292:GEOBASE(TM) 1980-1997/Aug  
(c) 1997 Elsevier Science Ltd.

File 305:Analytical Abstracts 1980-1997/Oct  
(c) 1997 Royal Soc Chemistry

File 345:Inpadoc/Fam.& Legal Stat. 1997/UD=9737  
(c) 1997 European Patent Office

\*File 345: The EPO is working to correct some garbled Japanese titles.

File 354:APILIT(R) 1965-1997/Sep W4  
(c) 1997 American Petroleum Institute

\*File 354: APIPAT/APILIT total usage limited to 2 hrs/yr.  
See HELP NEWS 354.

Set	Items	Description
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Executing	TD521	

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Completed processing	all files	
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2300153	BACTERIA? ?	
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535150	BACTERIUM	
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1866110	VIRUS	
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570607	VIRUSES	
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295064	FUNGUS	
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707152	FUNGI	
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774420	MICROORGANISM? ?	
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264896	RAMAN	
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6149797	DETECT?	
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11085208	DETERMIN?	
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S1	537	(BACTERIA? ? OR BACTERIUM OR VIRUS OR VIRUSES OR FUNGUS OR FUNGI OR MICROORGANISM? ?) (25N) (RAMAN AND (DETECT? OR DETERMIN?))
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>>>Duplicate detection is not supported for File 654.

>>>Duplicate detection is not supported for File 348.

>>>Duplicate detection is not supported for File 653.

>>>Duplicate detection is not supported for File 351.

>>>Duplicate detection is not supported for File 340.  
>>>Duplicate detection is not supported for File 388.  
>>>Duplicate detection is not supported for File 345.

>>>Records from unsupported files will be retained in the RD set.

...examined 50 records (50)  
...examined 50 records (100)  
...examined 50 records (150)  
...examined 50 records (200)  
...examined 50 records (250)  
...examined 50 records (300)

>>>Record 265:269650 ignored; incomplete bibliographic data, not retained -  
in RD set

>>>Record 265:227136 ignored; incomplete bibliographic data, not retained -  
in RD set

...examined 50 records (350)  
...examined 50 records (400)  
...examined 50 records (450)  
...examined 50 records (500)  
...completed examining records  
S2 356 RD (unique items)

? t s2/6/1-356

2/6/1 (Item 1 from file: 434)  
15922963 Genuine Article#: XR498 Number of References: 83  
Title: Characterization of the Rhodocyclus tenuis photosynthetic reaction  
center (ABSTRACT AVAILABLE)

2/6/2 (Item 2 from file: 434)  
15808982 Genuine Article#: XH669 Number of References: 59  
Title: Comparative Fourier transform infrared studies of the secondary  
structure and the CO heme ligand environment in cytochrome P-450cam and  
cytochrome P-420cam (ABSTRACT AVAILABLE)

2/6/3 (Item 3 from file: 434)  
15799897 Genuine Article#: XG901 Number of References: 60  
Title: Structure and interactions of the single-stranded DNA genome of  
filamentous virus fd: Investigation by ultraviolet resonance Raman  
spectroscopy (ABSTRACT AVAILABLE)

2/6/4 (Item 4 from file: 434)  
15704405 Genuine Article#: XA452 Number of References: 41  
Title: A small-angle neutron scattering study on the small aggregates of  
~~bacteriochlorophylls in solutions~~ (ABSTRACT AVAILABLE)

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2/6/5 (Item 5 from file: 434)  
15625115 Genuine Article#: WV345 Number of References: 23  
Title: Active site properties of the 3C proteinase from hepatitis A virus  
(a hybrid cysteine/serine protease) probed by Raman spectroscopy (  
ABSTRACT AVAILABLE)

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2/6/6 (Item 6 from file: 434)  
15598831 Genuine Article#: WT415 Number of References: 42  
Title: Transient nutation electron spin resonance spectroscopy on  
spin-correlated radical pairs: A theoretical analysis on

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hyperfine-induced nuclear modulations (ABSTRACT AVAILABLE)

2/6/7 (Item 7 from file: 434)  
15510803 Genuine Article#: WM402 Number of References: 196  
Title: Fourier transform Raman spectroscopy and its application for the  
analysis of polymeric materials

2/6/8 (Item 8 from file: 434)  
15504630 Genuine Article#: WL767 Number of References: 30  
Title: Fourier transform Raman study of retinal isomeric composition and  
equilibration in halorhodopsin (ABSTRACT AVAILABLE)

2/6/9 (Item 9 from file: 434)  
15488676 Genuine Article#: WL082 Number of References: 44  
Title: Spectroscopic properties of spheroidene analogs having different  
extents of pi-electron conjugation (ABSTRACT AVAILABLE)

2/6/10 (Item 10 from file: 434)  
15319663 Genuine Article#: VY781 Number of References: 37  
Title: SURFACE-ENHANCED RAMAN-SCATTERING SPECTROSCOPY OF SIALOSIDES AND  
THEIR DERIVATIVES (Abstract Available)

2/6/11 (Item 11 from file: 434)  
15316735 Genuine Article#: VZ194 Number of References: 93  
Title: THE RELATIONSHIP BETWEEN STRUCTURE AND FUNCTION FOR THE SULFITE  
REDUCTASES (Abstract Available)

2/6/12 (Item 12 from file: 434)  
15287271 Genuine Article#: VX149 Number of References: 51  
Title: THE APPLICATIONS OF RAMAN-SPECTROSCOPY IN FOOD-SCIENCE (Abstract  
Available)

2/6/13 (Item 13 from file: 434)  
15241312 Genuine Article#: VT860 Number of References: 36  
Title: SYNTHESIS AND CHARACTERIZATION OF A NEW PYRIMIDINE DERIVATIVE -  
5-[1-PHENYL-2-(3-CHLOROPHENYL)ETHYL]-2,4,6-TRICHLOROPYRIMIDINE (  
Abstract Available)

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2/6/14 (Item 14 from file: 434)  
15182517 Genuine Article#: VP215 Number of References: 57  
Title: SECONDARY STRUCTURE MODEL OF THE COAT PROTEIN GENE OF TURNIP YELLOW  
MOSAIC-VIRUS RNA - LONG, C-RICH, SINGLE-STRANDED REGIONS (Abstract  
Available)

2/6/15 (Item 15 from file: 434)  
15007151 Genuine Article#: VC341 Number of References: 62  
Title: HYDROGEN-BOND INTERACTIONS OF THE PRIMARY DONOR OF THE  
~~PHOTOSYNTHETIC PURPLE-SULFUR BACTERIUM CHROMATIUM-TEPIDUM~~ (Abstract  
Available)

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2/6/16 (Item 16 from file: 434)  
15007138 Genuine Article#: VC341 Number of References: 39  
Title: ORIENTATION OF TRYPTOPHAN-26 IN COAT PROTEIN SUBUNITS OF THE  
FILAMENTOUS VIRUS FF BY POLARIZED RAMAN MICROSCOPY (Abstract  
Available)

2/6/17 (Item 17 from file: 434)  
14897967 Genuine Article#: UV039 Number of References: 49  
Title: PIGMENT-PROTEIN INTERACTIONS IN THE ANTENNA-REACTION CENTER COMPLEX  
OF HELIOBACILLUS-MOBILIS (Abstract Available)

2/6/18 (Item 18 from file: 434)  
14855978 Genuine Article#: UT106 Number of References: 38  
Title: EXPRESSION AND SPECTROSCOPIC CHARACTERIZATION OF THE HYDROGENOSOMAL  
[2FE-2S] FERREDOXIN FROM THE PROTOZOAN TRICHOMONAS-VAGINALIS (Abstract  
Available)

2/6/19 (Item 19 from file: 434)  
14827704 Genuine Article#: UP667 Number of References: 35  
Title: SUBUNIT ORIENTATION IN THE FILAMENTOUS VIRUS FF(FD, F1, M13) (  
Abstract Available)

2/6/20 (Item 20 from file: 434)  
14774434 Genuine Article#: UK926 Number of References: 79  
Title: STRUCTURE AND PROTEIN-BINDING INTERACTIONS OF THE PRIMARY DONOR OF  
THE CHLOROFLEXUS-AURANTIACUS REACTION-CENTER (Abstract Available)

2/6/21 (Item 21 from file: 434)  
14692844 Genuine Article#: UE730 Number of References: 1  
Title: BIOSYNTHESIS OF TOPA QUINONE COFACTOR IN BACTERIAL AMINE OXIDASES -  
SOLVENT ORIGIN OF C-2 OXYGEN DETERMINED BY RAMAN-SPECTROSCOPY (VOL 271,  
PG 4718, 1996)

2/6/22 (Item 22 from file: 434)  
14691328 Genuine Article#: UE656 Number of References: 66  
Title: RAMAN LINEAR INTENSITY DIFFERENCE OF FLOW-ORIENTED MACROMOLECULES -  
ORIENTATION OF THE INDOLE RING OF TRYPTOPHAN-26 IN FILAMENTOUS VIRUS FD  
(Abstract Available)

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2/6/23 (Item 23 from file: 434)  
14652522 Genuine Article#: UC367 Number of References: 50  
Title: CAROTENOIDS IN MOLLUSCA - APPROACHING THE FUNCTIONS (Abstract  
Available)

2/6/24 (Item 24 from file: 434)  
14630388 Genuine Article#: TX375 Number of References: 12  
Title: RAMAN-SPECTROSCOPIC DETERMINATION OF THYMIDINE NUCLEOSIDE STRUCTURES  
IN NUCLEOTIDES (Abstract Available)

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2/6/25 (Item 25 from file: 434)  
14608785 Genuine Article#: UA094 Number of References: 21



Title: ISOLATION BY HIGH-PRESSURE LIQUID-CHROMATOGRAPHY, CONFIGURATIONAL DETERMINATION BY H-1-NMR, AND ANALYSES OF ELECTRONIC ABSORPTION AND RAMAN-SPECTRA OF ISOMERIC SPHEROIDENE (Abstract Available)

2/6/26 (Item 26 from file: 434)  
14602833 Genuine Article#: TZ682 Number of References: 0  
Title: DETERMINATION OF SUBUNIT AND SIDE-CHAIN ORIENTATIONS IN FF FILAMENTOUS VIRUS BY POLARIZED RAMAN MICROSCOPY OF ORIENTED FIBERS

2/6/27 (Item 27 from file: 434)  
14595681 Genuine Article#: TZ980 Number of References: 52  
Title: STRUCTURE, INTERACTIONS AND DYNAMICS OF PRD1 VIRUS .2. ORGANIZATION OF THE VIRAL MEMBRANE AND DNA (Abstract Available)

2/6/28 (Item 28 from file: 434)  
14537581 Genuine Article#: TW173 Number of References: 7  
Title: DAIRY PRODUCT ANALYSIS - IDENTIFICATION OF MICROORGANISMS BY MIDINFRARED SPECTROSCOPY AND DETERMINATION OF CONSTITUENTS BY RAMAN-SPECTROSCOPY (Abstract Available)

2/6/29 (Item 29 from file: 434)  
14347392 Genuine Article#: TF353 Number of References: 72  
Title: TIME-RESOLVED AND STEADY-STATE SPECTROSCOPIC ANALYSIS OF MEMBRANE-BOUND REACTION CENTERS FROM RHODOBACTER-SPHAEROIDES - COMPARISONS WITH DETERGENT-SOLUBILIZED COMPLEXES (Abstract Available)

2/6/30 (Item 30 from file: 434)  
14331402 Genuine Article#: BE08G Number of References: 30  
Title: DETECTION OF INTERMEDIATES IN TRYPTOPHAN TRYPTOPHYLQUINONE ENZYMES

2/6/31 (Item 31 from file: 434)  
14312572 Genuine Article#: TC978 Number of References: 48  
Title: BOVINE ELASTIN AND KAPPA-ELASTIN SECONDARY STRUCTURE DETERMINATION BY OPTICAL SPECTROSCOPIES (Abstract Available)

2/6/32 (Item 32 from file: 434)  
14194790 Genuine Article#: RV050 Number of References: 61  
Title: SYMMETRICAL STRUCTURAL FEATURES AND BINDING-SITE OF THE PRIMARY ELECTRON-DONOR IN THE REACTION-CENTER OF CHLOROBIIUM (Abstract Available)

2/6/33 (Item 33 from file: 434)  
14055200 Genuine Article#: RJ999 Number of References: 28  
Title: STRUCTURAL STUDY OF HUMAN GROWTH HORMONE-RELEASING FACTOR FRAGMENT-(1-29) BY VIBRATIONAL SPECTROSCOPY (Abstract Available)

2/6/34 (Item 34 from file: 434)  
14026245 Genuine Article#: RJ065 Number of References: 25  
Title: SEQUENTIAL TREATMENT OF MECHANICAL AND CHEMOMECHANICAL PULPS WITH LIGHT AND HEAT - A RAMAN-SPECTROSCOPIC STUDY (Abstract Available)

2/6/35 (Item 35 from file: 434)  
13941208 Genuine Article#: RB205 Number of References: 48  
Title: STRUCTURE OF THE PHOTOCHEMICAL-REACTION CENTER OF A  
SPHEROIDENE-CONTAINING PURPLE BACTERIUM, RHODOBACTER-SPHAEROIDES-Y, AT  
3 ANGSTROM RESOLUTION (Abstract Available)

2/6/36 (Item 36 from file: 434)  
13847121 Genuine Article#: QV314 Number of References: 37  
Title: VIRUS STRUCTURE BY LASER RAMAN-SPECTROSCOPY .45. RAMAN-SPECTROSCOPY  
OF THE FILAMENTOUS VIRUS FF (FD, FL, M13) - STRUCTURAL INTERPRETATION  
FOR COAT PROTEIN AROMATICS (Abstract Available)

2/6/37 (Item 37 from file: 434)  
13829749 Genuine Article#: QU260 Number of References: 29  
Title: NEAR-INFRARED RESONANCE RAMAN-SPECTRA OF CHLOROFLEXUS-AURANTIACUS  
PHOTOSYNTHETIC REACTION CENTERS (Abstract Available)

2/6/38 (Item 38 from file: 434)  
13795199 Genuine Article#: QQ601 Number of References: 41  
Title: SELF-ASSEMBLED MONOLAYERS AS NOVEL BIOMEMBRANE MIMETICS .1.  
CHARACTERIZATION OF CYTOCHROME-C BOUND TO SELF-ASSEMBLED MONOLAYERS ON  
SILVER BY SURFACE-ENHANCED RESONANCE RAMAN-SPECTROSCOPY (Abstract  
Available)

2/6/39 (Item 39 from file: 434)  
13699666 Genuine Article#: QH944 Number of References: 45  
Title: POLARIZED RAMAN-SPECTRA OF ORIENTED FIBERS OF A-DNA AND B-DNA -  
ANISOTROPIC AND ISOTROPIC LOCAL RAMAN TENSORS OF BASE AND BACKBONE  
VIBRATIONS (Abstract Available)

2/6/40 (Item 40 from file: 434)  
13651895 Genuine Article#: QF536 Number of References: 54  
Title: A MODEL-COMPOUND OF NOVEL COFACTOR TRYPTOPHAN TRYPTOPHYLQUINONE OF  
BACTERIAL METHYLAMINE DEHYDROGENASES - SYNTHESIS AND PHYSICO-CHEMICAL  
PROPERTIES (Abstract Available)

2/6/41 (Item 41 from file: 434)  
13570101 Genuine Article#: PY874 Number of References: 80  
~~Title: PROTEIN-STRUCTURE MODELING OF THE BACTERIAL LIGHT-HARVESTING COMPLEX~~  
(Abstract Available)

2/6/42 (Item 42 from file: 434)  
13485043 Genuine Article#: PR260 Number of References: 66  
Title: A QUANTITATIVE METHODOLOGY FOR THE DE-NOVO DESIGN OF PROTEINS (  
Abstract Available)

~~2/6/43 (Item 43 from file: 434)~~  
13481170 Genuine Article#: PQ930 Number of References: 35  
Title: INFLUENCE OF MONOVALENT CATIONS ON THE ULTRAVIOLET-VISIBLE SPECTRUM  
OF TRYPTOPHAN TRYPTOPHYLQUINONE-CONTAINING METHYLAMINE DEHYDROGENASE

FROM BACTERIUM W3A1 (Abstract Available)

2/6/44 (Item 44 from file: 434)  
13455046 Genuine Article#: PP527 Number of References: 66  
Title: RESONANCE RAMAN EVIDENCE FOR AN FE-O-FE CENTER IN STEAROYL-ACP  
DESATURASE - PRIMARY SEQUENCE IDENTITY WITH OTHER DIIRON-OXO PROTEINS  
(Abstract Available)

2/6/45 (Item 45 from file: 434)  
13418353 Genuine Article#: PL230 Number of References: 22  
Title: SURFACE-ENHANCED RAMAN GENE PROBES (Abstract Available)

2/6/46 (Item 46 from file: 434)  
13408568 Genuine Article#: PK782 Number of References: 22  
Title: RESEARCH ON CHROMATIC ALTERATIONS OF MARBLES FROM THE FOUNTAIN OF  
VILLA-LITTA (LAinate, MILAN) (Abstract Available)

2/6/47 (Item 47 from file: 434)  
13280219 Genuine Article#: PC129 Number of References: 23  
Title: FOURIER-TRANSFORM RAMAN-SPECTROSCOPY OF BACTERIAL-CELL WALLS (Abstract Available)

2/6/48 (Item 48 from file: 434)  
13236391 Genuine Article#: PA947 Number of References: 50  
Title: HYDROGEN-EXCHANGE DYNAMICS OF THE P22 VIRION DETERMINED BY  
TIME-RESOLVED RAMAN-SPECTROSCOPY - EFFECTS OF CHROMOSOME PACKAGING ON  
THE KINETICS OF NUCLEOTIDE EXCHANGES (Abstract Available)

2/6/49 (Item 49 from file: 434)  
13220279 Genuine Article#: NY265 Number of References: 33  
Title: NEW POLYMERIC MATERIALS - PORPHYRINS ATTACHED TO PREFORMED  
POLYSTYRENE (Abstract Available)

2/6/50 (Item 50 from file: 434)  
13157813 Genuine Article#: NF373 Number of References: 703  
Title: ULTRASHORT-PULSE GENERATION AND AMPLIFICATION - APPLICATIONS IN  
ANALYTICAL-CHEMISTRY

2/6/51 (Item 51 from file: 434)  
13143334 Genuine Article#: NQ725 Number of References: 64  
Title: NEAR-INFRARED RESONANCE RAMAN-SPECTROSCOPY OF THE SPECIAL PAIR AND  
THE ACCESSORY BACTERIOCHLOROPHYLLS IN PHOTOSYNTHETIC REACTION CENTERS  
(Abstract Available)

2/6/52 (Item 52 from file: 434)  
13130563 Genuine Article#: NR179 Number of References: 72  
Title: ACCURACY OF PROTEIN FLEXIBILITY PREDICTIONS (Abstract Available)

2/6/53 (Item 53 from file: 434)  
13126069 Genuine Article#: NQ672 Number of References: 19

Title: STUDIES OF ENERGY-TRANSFER OF PORPHYRINS IN MICROHETEROGENEOUS  
SYSTEMS (Abstract Available)

2/6/54 (Item 54 from file: 434)  
13024018 Genuine Article#: NJ081 Number of References: 35  
Title: CHARACTERIZATION OF THE IRON-SULFUR CLUSTERS IN FERREDOXIN FROM  
ACETATE-GROWN METHANOSARCINA-THERMOPHILA (Abstract Available)

2/6/55 (Item 55 from file: 434)  
12947989 Genuine Article#: NB997 Number of References: 12  
Title: VIBRONIC MIXING IN THE STRONG ELECTRONIC COUPLING LIMIT -  
SPECTROSCOPIC EFFECTS OF FORBIDDEN TRANSITIONS (Abstract Available)

2/6/56 (Item 56 from file: 434)  
12916908 Genuine Article#: MZ353 Number of References: 55  
Title: PHOTOINDUCED VOLUME CHANGES ASSOCIATED WITH THE EARLY  
TRANSFORMATIONS OF BACTERIORHODOPSIN - A LASER-INDUCED OPTOACOUSTIC  
SPECTROSCOPY STUDY (Abstract Available)

2/6/57 (Item 57 from file: 434)  
12868743 Genuine Article#: MY842 Number of References: 69  
Title: ULTRAVIOLET ABSORBENCY AND CIRCULAR-DICHROISM OF PF1 VIRUS -  
NUCLEOTIDE/SUBUNIT RATIO OF UNITY, HYPERCHROMIC TYROSINES AND DNA  
BASES, AND HIGH HELICITY IN THE SUBUNITS (Abstract Available)

2/6/58 (Item 58 from file: 434)  
12868736 Genuine Article#: MY842 Number of References: 43  
Title: CHANGES IN PRIMARY DONOR HYDROGEN-BONDING INTERACTIONS IN MUTANT  
REACTION CENTERS FROM RHODOBACTER-SPHAEROIDES - IDENTIFICATION OF THE  
VIBRATIONAL FREQUENCIES OF ALL THE CONJUGATED CARBONYL GROUPS (  
Abstract Available)

2/6/59 (Item 59 from file: 434)  
12798354 Genuine Article#: MP934 Number of References: 54  
Title: HYDROGEN-BONDING OF WATER TO CHLOROPHYLL A AND ITS DERIVATIVES AS  
DETECTED BY H-1-NMR SPECTROSCOPY (Abstract Available)

2/6/60 (Item 60 from file: 434)  
12794117 Genuine Article#: MQ877 Number of References: 34  
Title: SOLUTION STRUCTURE OF RP-71955, A NEW 21-AMINO-ACID TRICYCLIC  
PEPTIDE ACTIVE AGAINST HIV-1 VIRUS (Abstract Available)

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2/6/61 (Item 61 from file: 434)  
12774983 Genuine Article#: MQ100 Number of References: 39  
Title: PLANAR NONPLANAR CONFORMATIONAL EQUILIBRIUM IN METAL DERIVATIVES OF  
OCTAETHYLPORPHYRIN AND MESO-NITROOCTAETHYLPORPHYRIN (Abstract  
Available)

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2/6/62 (Item 62 from file: 434)  
12722036 Genuine Article#: MJ990 Number of References: 64  
Title: STRUCTURE, SPECTROSCOPIC, AND REDOX PROPERTIES OF

RHODOBACTER-SPHAEROIDES REACTION CENTERS BEARING POINT MUTATIONS NEAR  
THE PRIMARY ELECTRON-DONOR (Abstract Available)

- 2/6/63 (Item 63 from file: 434)  
12698808 Genuine Article#: MG624 Number of References: 61  
Title: ULTRAVIOLET MICRO-RAMAN SPECTROGRAPH FOR THE DETECTION OF SMALL  
NUMBERS OF BACTERIAL-CELLS (Abstract Available)
- 2/6/64 (Item 64 from file: 434)  
12686612 Genuine Article#: MF303 Number of References: 24  
Title: MONOLAYER CHARACTERISTICS OF BACTERIAL PHOTOSYNTHETIC REACTION  
CENTERS (Abstract Available)
- 2/6/65 (Item 65 from file: 434)  
12686142 Genuine Article#: MF321 Number of References: 23  
Title: RAMAN DYNAMIC PROBE OF HYDROGEN-EXCHANGE IN BEAN POD MOTTLE VIRUS -  
BASE-SPECIFIC RETARDATION OF EXCHANGE IN PACKAGED SSRNA (Abstract  
Available)
- 2/6/66 (Item 66 from file: 434)  
12653103 Genuine Article#: MC828 Number of References: 58  
Title: MEASUREMENT OF CEREBROSPINAL-FLUID ANTIBODY TO THE HIV-1 PRINCIPAL  
NEUTRALIZING DETERMINANT (V3 LOOP) (Abstract Available)
- 2/6/67 (Item 67 from file: 434)  
12643386 Genuine Article#: MB897 Number of References: 264  
Title: TANSLEY REVIEW .52. THE ROLE OF ACTIVE OXYGEN IN THE RESPONSE OF  
PLANTS TO WATER-DEFICIT AND DESICCATION (Abstract Available)
- 2/6/68 (Item 68 from file: 434)  
12641578 Genuine Article#: MC530 Number of References: 25  
Title: STUDIES OF CELLULOSE TRANSFORMATIONS USING 2ND DERIVATIVE FTIR  
SPECTROSCOPY (Abstract Available)
- 2/6/69 (Item 69 from file: 434)  
12575817 Genuine Article#: LX798 Number of References: 45  
Title: EXCITED-STATE DYNAMICS OF MUTATED ANTENNA COMPLEXES OF PURPLE  
BACTERIA STUDIED BY HOLE-BURNING (Abstract Available)
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- 2/6/70 (Item 70 from file: 434)  
12459827 Genuine Article#: LN988 Number of References: 53  
Title: FT-IR STUDIES ON THE TRIPLET-STATE OF P680 IN THE PHOTOSYSTEM-II  
REACTION-CENTER - TRIPLET EQUILIBRIUM WITHIN A CHLOROPHYLL DIMER (  
Abstract Available)
- 2/6/71 (Item 71 from file: 434)  
12396501 Genuine Article#: LH977 Number of References: 59  
Title: PHOTOREDUCTION OF HEME-PROTEINS - SPECTROSCOPIC STUDIES AND  
CROSS-SECTION MEASUREMENTS (Abstract Available)
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2/6/72 (Item 72 from file: 434)  
12393844 Genuine Article#: LH439 Number of References: 19  
Title: LOW-LYING ELECTRONIC LEVELS OF SPHEROIDENE BOUND TO THE  
LIGHT-HARVESTING (LH2) COMPLEX OF RHODOBACTER-SPHAEROIDES 2.4.1 AS  
DETERMINED BY FLUORESCENCE AND FLUORESCENCE EXCITATION SPECTROSCOPY AT  
170-K (Abstract Available)

2/6/73 (Item 73 from file: 434)  
12385607 Genuine Article#: LG441 Number of References: 44  
Title: ENERGY-TRANSFER BETWEEN THE REACTION-CENTER AND THE ANTENNA IN  
PURPLE BACTERIA (Abstract Available)

2/6/74 (Item 74 from file: 434)  
12367968 Genuine Article#: LF703 Number of References: 45  
Title: DETERMINATION OF THE PKA VALUES OF ACTIVE-CENTER CYSTEINES,  
CYSTEINES-32 AND CYSTEINES-35, IN ESCHERICHIA-COLI THIOREDOXIN BY  
RAMAN-SPECTROSCOPY (Abstract Available)

2/6/75 (Item 75 from file: 434)  
12353581 Genuine Article#: LF063 Number of References: 33  
Title: UNEXPECTED SIMILARITIES OF THE B800-850 LIGHT-HARVESTING COMPLEX  
FROM RHODOSPIRILLUM-MOLISCHIANUM TO THE B870 LIGHT-HARVESTING COMPLEXES  
FROM OTHER PURPLE PHOTOSYNTHETIC BACTERIA (Abstract Available)

2/6/76 (Item 76 from file: 434)  
12242320 Genuine Article#: KW704 Number of References: 80  
Title: HUMAN HEPATIC CYP1A1 AND CYP1A2 CONTENT, DETERMINED WITH SPECIFIC  
ANTIPEPTIDE ANTIBODIES, CORRELATES WITH THE MUTAGENIC ACTIVATION OF  
PHIP (Abstract Available)

2/6/77 (Item 77 from file: 434)  
12226414 Genuine Article#: KV752 Number of References: 71  
Title: EXCITATION MIGRATION AND TRAPPING IN HOMOGENEOUS AND HETEROGENEOUS  
LATTICES - APPLICATION TO THE LIGHT-HARVESTING ANTENNA COMPLEX OF  
PHOTOSYNTHETIC BACTERIA (Abstract Available)

2/6/78 (Item 78 from file: 434)  
12188004 Genuine Article#: KT697 Number of References: 934  
Title: PRIMARY EVENTS IN PHOTOSYNTHESIS - PROBLEMS, SPECULATIONS,  
CONTROVERSIES, AND FUTURE-TRENDS

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2/6/79 (Item 79 from file: 434)  
12070603 Genuine Article#: KJ689 Number of References: 77  
Title: METAL DEPENDENCE OF THE NONPLANAR DISTORTION OF  
OCTAALKYLTETRAPHENYLPORPHYRINS (Abstract Available)

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2/6/80 (Item 80 from file: 434)  
~~12065100 Genuine Article#: KJ288 Number of References: 20~~  
Title: ~~PICOSECOND RAMAN-SPECTROSCOPY OF THE B830 LH2 COMPLEX OF~~  
~~CHROMATIUM-PURPURATUM BN-5500 (Abstract Available)~~

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2/6/81 (Item 81 from file: 434)  
12015490 Genuine Article#: KD929 Number of References: 28  
Title: SELECTIVE OXYGENATION OF ADAMANTANES AND OTHER SUBSTRATES BY  
BEAUVERIA-SULFURESCENS (Abstract Available)

2/6/82 (Item 82 from file: 434)  
11804570 Genuine Article#: JM979 Number of References: 36  
Title: STRUCTURAL STUDIES OF VIRUSES BY LASER RAMAN-SPECTROSCOPY .36.  
CYSTEINE CONFORMATION AND SULFHYDRYL INTERACTIONS IN PROTEINS AND  
VIRUSES .2. NORMAL COORDINATE ANALYSIS OF THE CYSTEINE SIDE-CHAIN IN  
MODEL COMPOUNDS (Abstract Available)

2/6/83 (Item 83 from file: 434)  
11726111 Genuine Article#: JG232 Number of References: 35  
Title: COVALENT LINKAGE OF RUTHENIUM POLYPYRIDYL COMPOUNDS TO  
POLY(L-LYSINE), ALBUMINS, AND IMMUNOGLOBULIN-G (Abstract Available)

2/6/84 (Item 84 from file: 434)  
11676860 Genuine Article#: JD039 Number of References: 111  
Title: FEMTOSECOND BIOLOGY

2/6/85 (Item 85 from file: 434)  
11642468 Genuine Article#: HZ941 Number of References: 34  
Title: FLOW LINEAR DICHROISM SPECTRA OF 4 FILAMENTOUS BACTERIOPHAGES - DNA  
AND COAT PROTEIN CONTRIBUTIONS (Abstract Available)

2/6/86 (Item 86 from file: 434)  
11423547 Genuine Article#: HH366 Number of References: 77  
Title: MODELING OF STRUCTURE AND FUNCTION OF PROTEINS AND NUCLEIC-ACIDS (Abstract Available)

2/6/87 (Item 87 from file: 434)  
11336866 Genuine Article#: HB392 Number of References: 84  
Title: PHOTOCHEMICAL HOLE-BURNING SPECTROSCOPY OF BOVINE RHODOPSIN AND  
BACTERIORHODOPSIN (Abstract Available)

2/6/88 (Item 88 from file: 434)  
11255778 Genuine Article#: GV877 Number of References: 36  
Title: RAPID-FLOW RESONANCE RAMAN-SPECTROSCOPY OF BACTERIAL PHOTOSYNTHETIC  
REACTION CENTERS (Abstract Available)

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2/6/89 (Item 89 from file: 434)  
11237098 Genuine Article#: GT554 Number of References: 20  
Title: BIOSYNTHESIS OF TETRAHYDROFOLATE - SEQUENCE OF GTP CYCLOHYDROLASE-I  
FROM ESCHERICHIA-COLI (Abstract Available)

2/6/90 (Item 90 from file: 434)  
11178148 Genuine Article#: GN658 Number of References: 54  
Title: RESONANCE RAMAN-STUDY ON INTACT PEA PHYTOCHROME AND ITS MODEL  
COMPOUNDS - EVIDENCE FOR PROTON MIGRATION DURING THE  
PHOTOTRANSFORMATION (Abstract Available)

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2/6/91 (Item 91 from file: 434)  
11147915 Genuine Article#: GL153 Number of References: 29  
Title: PLASMID-ENCODED DETERMINANTS FOR BACTERIOCIN PRODUCTION AND IMMUNITY  
IN A LACTOCOCCUS-LACTIS STRAIN AND PURIFICATION OF THE INHIBITORY  
PEPTIDE (Abstract Available)

2/6/92 (Item 92 from file: 434)  
11098561 Genuine Article#: GG383 Number of References: 47  
Title: TRIPLET-SENSITIZED AND THERMAL-ISOMERIZATION OF ALL-TRANS, 7-CIS,  
9-CIS, 13-CIS, AND 15-CIS ISOMERS OF BETA-CAROTENE - CONFIGURATIONAL  
DEPENDENCE OF THE QUANTUM YIELD OF ISOMERIZATION VIA THE T1 STATE (  
Abstract Available)

2/6/93 (Item 93 from file: 434)  
11080437 Genuine Article#: GE717 Number of References: 24  
Title: STRUCTURE OF THE ASPERGILLUS-NIGER-PELA GENE AND ITS EXPRESSION IN  
ASPERGILLUS-NIGER AND ASPERGILLUS-NIDULANS (Abstract Available)

2/6/94 (Item 94 from file: 434)  
11071463 Genuine Article#: GE362 Number of References: 21  
Title: BIOSYNTHESIS OF PEPTIDOGLYCAN IN GAFFKYA-HOMARI - ON THE TARGET(S)  
OF BENZYL PENICILLIN (Abstract Available)

2/6/95 (Item 95 from file: 434)  
11060853 Genuine Article#: GD635 Number of References: 53  
Title: CHARACTERIZATION OF A RECOMBINANT SINGLE-CHAIN MOLECULE COMPRISING  
THE VARIABLE DOMAINS OF A MONOCLONAL-ANTIBODY SPECIFIC FOR HUMAN FIBRIN  
FRAGMENT D-DIMER (Abstract Available)

2/6/96 (Item 96 from file: 434)  
11042330 Genuine Article#: GB933 Number of References: 64  
Title: HYDROPHOBIC SUBSTITUTION MUTATIONS IN THE S4-SEQUENCE ALTER  
VOLTAGE-DEPENDENT GATING IN SHAKER K+-CHANNELS (Abstract Available)

2/6/97 (Item 97 from file: 434)  
11001609 Genuine Article#: FZ092 Number of References: 48  
Title: MECHANISM OF AUTOXIDATION OF OXYHEMOGLOBIN (Abstract Available)

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2/6/98 (Item 98 from file: 434)  
11001139 Genuine Article#: FY086 Number of References: 32  
Title: DOES THE INTESTINAL MICROFLORA SYNTHESIZE PYRROLOQUINOLINE QUINONE  
(Abstract Available)

2/6/99 (Item 99 from file: 434)  
10999159 Genuine Article#: FZ351 Number of References: 29  
Title: RESIDUES IN THE ALPHA-SUBUNIT OF HUMAN CHORIOTROPIN THAT ARE  
IMPORTANT FOR INTERACTION WITH THE LUTROPIN RECEPTOR (Abstract  
Available)

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2/6/100 (Item 100 from file: 434)  
10997772 Genuine Article#: FZ108 Number of References: 73  
Title: OBSERVATION OF MULTIPLE RADICAL PAIR STATES IN PHOTOSYSTEM-2  
REACTION CENTERS (Abstract Available)

2/6/101 (Item 101 from file: 434)  
10956158 Genuine Article#: FV354 Number of References: 28  
Title: FEMTOSECOND ENERGY-TRANSFER PROCESSES IN THE B800-850  
LIGHT-HARVESTING COMPLEX OF RHODOBACTER-SPHAEROIDES-2.4.1 (Abstract  
Available)

2/6/102 (Item 102 from file: 434)  
10939681 Genuine Article#: FT847 Number of References: 51  
Title: A MECHANISM OF TEMPERATURE-DEPENDENT ELECTRON-TRANSFER REACTIONS IN  
BIOLOGICAL-SYSTEMS (Abstract Available)

2/6/103 (Item 103 from file: 434)  
10927467 Genuine Article#: FT936 Number of References: 40  
Title: DIFFERENTIAL DNA-BINDING BY CALF UTERINE ESTROGEN AND PROGESTERONE  
RECEPTORS RESULTS FROM DIFFERENCES IN OLIGOMERIC STATES (Abstract  
Available)

2/6/104 (Item 104 from file: 434)  
10895914 Genuine Article#: FP590 Number of References: 82  
Title: TEMPERATURE-DEPENDENCE OF THE INITIAL ELECTRON-TRANSFER KINETICS IN  
PHOTOSYNTHETIC REACTION CENTERS OF CHLOROFLEXUS-AURANTIACUS (Abstract  
Available)

2/6/105 (Item 105 from file: 434)  
10872854 Genuine Article#: FN005 Number of References: 69  
Title: RELATIONSHIPS BETWEEN STRUCTURAL PARAMETERS AND RAMAN FREQUENCIES  
FOR SOME PLANAR AND NONPLANAR NICKEL(II) PORPHYRINS (Abstract  
Available)

2/6/106 (Item 106 from file: 434)  
10860517 Genuine Article#: FM712 Number of References: 68  
Title: STRUCTURAL DETERMINANTS OF ALPHA-BUNGAROTOXIN BINDING TO THE  
SEQUENCE SEGMENT 181-200 OF THE MUSCLE NICOTINIC ACETYLCHOLINE-RECEPTOR  
~~ALPHA-SUBUNIT - EFFECTS OF CYSTEINE CYSTINE MODIFICATION AND~~  
~~SPECIES-SPECIFIC AMINO-ACID SUBSTITUTIONS~~ (Abstract Available)

2/6/107 (Item 107 from file: 434)  
10796471 Genuine Article#: FH098 Number of References: 35  
Title: S1 AND T1 SPECIES OF BETA-CAROTENE GENERATED BY DIRECT  
PHOTOEXCITATION FROM THE ALL-TRANS, 9-CIS, 13-CIS, AND 15-CIS ISOMERS  
AS REVEALED BY PICOSECOND TRANSIENT ABSORPTION AND TRANSIENT RAMAN  
SPECTROSCOPIES (Abstract Available)

2/6/108 (Item 108 from file: 434)  
10750699 Genuine Article#: FD379 Number of References: 18  
Title: DIMERIC CAROTENOID INTERACTION IN THE LIGHT-HARVESTING ANTENNA OF  
PURPLE PHOTOTROPHIC BACTERIA (Abstract Available)

2/6/109 (Item 109 from file: 434)  
10699938 Genuine Article#: FA694 Number of References: 23  
Title: THE ORGANIC FUNCTIONAL-GROUP IN COPPER-CONTAINING AMINE OXIDASES -  
RESONANCE RAMAN-SPECTRA ARE CONSISTENT WITH THE PRESENCE OF TOPA  
QUINONE (6-HYDROXYDOPA QUINONE) IN THE ACTIVE-SITE (Abstract Available  
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2/6/110 (Item 110 from file: 434)  
10635315 Genuine Article#: EV016 Number of References: 35  
Title: TRIPLET EXCITATION OF PRECURSORS OF SPIRILLOXANTHIN BOUND TO THE  
CHROMATOPHORES OF RHODOSPIRILLUM-RUBRUM AS DETECTED BY TRANSIENT  
RAMAN-SPECTROSCOPY

2/6/111 (Item 111 from file: 434)  
10589771 Genuine Article#: EQ984 Number of References: 46  
Title: HEMATOPORPHYRIN-PROMOTED PHOTOINACTIVATION OF MITOCHONDRIAL  
UBIQUINOL-CYTOCHROME-C REDUCTASE - SELECTIVE DESTRUCTION OF THE  
HISTIDINE LIGANDS OF THE IRON SULFUR CLUSTER AND PROTECTIVE EFFECT OF  
UBIQUINONE (Abstract Available)

2/6/112 (Item 112 from file: 434)  
10464847 Genuine Article#: EE887 Number of References: 30  
Title: STRUCTURAL ABNORMALITY IN LDL FROM DIABETIC-PATIENTS AS REVEALED BY  
RESONANCE RAMAN-SPECTROSCOPY

2/6/113 (Item 113 from file: 434)  
09150002 Genuine Article#: R0048 Number of References: 32  
Title: THE MYOGLOBIN PROTEIN RADICAL - COUPLING OF TYR-103 TO TYR-151 IN  
THE H2O2-MEDIATED CROSS-LINKING OF SPERM WHALE MYOGLOBIN

2/6/114 (Item 114 from file: 434)  
09149742 Genuine Article#: R0204 Number of References: 50  
Title: FUNCTION OF ARGININE-234 AND ASPARTIC ACID-271 IN DOMAIN CLOSURE,  
COOPERATIVITY, AND CATALYSIS IN ESCHERICHIA-COLI  
ASPARTATE-TRANSCARBAMYLASE

2/6/115 (Item 115 from file: 434)  
09055623 Genuine Article#: Q2625 Number of References: 28  
Title: APOMYOGLOBIN AS A MOLECULAR RECOGNITION SURFACE - EXPRESSION,  
~~RECONSTITUTION AND CRYSTALLIZATION OF RECOMBINANT PORCINE MYOGLOBIN IN~~  
ESCHERICHIA-COLI

2/6/116 (Item 116 from file: 434)  
08919956 Genuine Article#: P3224 Number of References: 58  
Title: AN INVESTIGATION OF PROTEIN SUBUNIT AND DOMAIN INTERFACES

2/6/117 (Item 117 from file: 434)  
~~08752601~~ Genuine Article#: N1995 Number of References: 53  
Title: SITE-SPECIFIC SUBSTITUTIONS OF THE TYR-165 RESIDUE IN THE CATALYTIC  
CHAIN OF ASPARTATE TRANSCARBAMOYLASE PROMOTES A T-STATE PREFERENCE IN

THE HOLOENZYME

2/6/118 (Item 118 from file: 434)  
08605271 Genuine Article#: M1158 Number of References: 129  
Title: SECONDARY STRUCTURE PREDICTION AND DETERMINATION OF PROTEINS - A  
REVIEW

2/6/119 (Item 119 from file: 434)  
08543258 Genuine Article#: L6145 Number of References: 45  
Title: CHEMICALLY MODIFIED PHOTOSYNTHETIC BACTERIAL REACTION CENTERS -  
CIRCULAR-DICHROISM, RAMAN RESONANCE, LOW-TEMPERATURE ABSORPTION,  
FLUORESCENCE AND ODMR SPECTRA AND POLYPEPTIDE COMPOSITION OF  
BOROHYDRIDE TREATED REACTION CENTERS FROM RHODOBACTER-SPHEROIDES-R26

2/6/120 (Item 120 from file: 434)  
08507314 Genuine Article#: L3538 Number of References: 899  
Title: FOLDING AND ASSOCIATION OF PROTEINS

2/6/121 (Item 121 from file: 434)  
08320899 Genuine Article#: J9872 Number of References: 136  
Title: PROTEIN ANTIGENIC STRUCTURES RECOGNIZED BY T-CELLS - POTENTIAL  
APPLICATIONS TO VACCINE DESIGN

2/6/122 (Item 122 from file: 434)  
08306314 Genuine Article#: J8929 Number of References: 61  
Title: COMPUTER-PREDICTION OF POTENTIAL IMMUNOGENIC DETERMINANTS FROM  
PROTEIN AMINO-ACID SEQUENCE

2/6/123 (Item 123 from file: 434)  
08197512 Genuine Article#: J1728 Number of References: 48  
Title: AXIAL LIGATION-INDUCED STRUCTURAL-CHANGES IN NICKEL HYDROCORPHINOIDS  
RELATED TO COENZYME-F430 DETECTED BY RAMAN DIFFERENCE SPECTROSCOPY

2/6/124 (Item 124 from file: 434)  
08190191 Genuine Article#: J0226 Number of References: 65  
Title: DETERMINATION OF THE SECONDARY STRUCTURE OF PROTEINS FROM THE RAMAN  
AMIDE-I BAND - THE REFERENCE INTENSITY PROFILES METHOD

2/6/125 (Item 125 from file: 434)  
~~08150140 Genuine Article#: H7461~~ Number of References: 60  
Title: APPLYING KNOWLEDGE OF PROTEIN-STRUCTURE AND FUNCTION

2/6/126 (Item 126 from file: 434)  
07891245 Genuine Article#: F9823 Number of References: 12  
Title: THE RESONANCE RAMAN MICROPROBE DETECTION OF SINGLE BACTERIAL-CELLS  
FROM A CHROMOBACTERIAL MIXTURE

~~2/6/127 (Item 127 from file: 434)~~  
~~07858413 Genuine Article#: F7464~~ Number of References: 25  
Title: THE ORGANIC COFACTOR IN PLASMA AMINE OXIDASE - EVIDENCE FOR

PYRROLOQUINOLINE QUINONE AND AGAINST PYRIDOXAL-PHOSPHATE

2/6/128 (Item 128 from file: 434)  
07692666 Genuine Article#: F2476 Number of References: 14  
Title: EVIDENCE FOR PYRROLOQUINOLINEQUINONE AS THE CARBONYL COFACTOR IN  
LYSYL OXIDASE BY ABSORPTION AND RESONANCE RAMAN-SPECTROSCOPY

2/6/129 (Item 129 from file: 434)  
07655673 Genuine Article#: E9844 Number of References: 26  
Title: CATIONIC PORPHYRINS AS PROBES OF DNA-STRUCTURE

2/6/130 (Item 130 from file: 434)  
07649007 Genuine Article#: E9067 Number of References: 49  
Title: EVIDENCE FOR METHOXATIN (PYRROLOQUINOLINEQUINONE) AS THE COFACTOR IN  
BOVINE PLASMA AMINE OXIDASE FROM RESONANCE RAMAN-SPECTROSCOPY

2/6/131 (Item 131 from file: 434)  
07620632 Genuine Article#: E6781 Number of References: 46  
Title: ULTRASTRUCTURAL-LOCALIZATION OF DNA IN 2 CRYPTOMONAS SPECIES BY USE  
OF A MONOCLONAL DNA ANTIBODY

2/6/132 (Item 132 from file: 434)  
07546402 Genuine Article#: E1833 Number of References: 92  
Title: THE ROLE OF INDUCTIVE EFFECT IN THE DETERMINATION OF  
PROTEIN-STRUCTURE

2/6/133 (Item 133 from file: 434)  
07525829 Genuine Article#: D9954 Number of References: 37  
Title: EFFECT OF ANTHRACYCLINE ANTIBIOTICS ON THE NEURAMINIDASE ACTIVITY OF  
SENDAI VIRUS

2/6/134 (Item 134 from file: 434)  
07473273 Genuine Article#: D6886 Number of References: 104  
Title: LONG-RANGE ELECTRON-TRANSFER IN HEME-PROTEINS

2/6/135 (Item 135 from file: 434)  
~~07071863 Genuine Article#: AZA99 Number of References: 45~~  
~~Title: STRUCTURE DETERMINATION OF PANULIRUS-INTERRUPTUS HEMOCYANIN AT 3.2A~~  
~~RESOLUTION - SUCCESSFUL PHASE EXTENSION BY SIXFOLD DENSITY AVERAGING~~

2/6/136 (Item 136 from file: 434)  
07065910 Genuine Article#: AYJ72 Number of References: 14  
Title: EFFECT OF SOME ANTHRACYCLINE ANTIBIOTICS ON THE NEURAMINIDASE  
ACTIVITY OF SENDAI VIRUS AND ITS ISOLATED GLYCOPROTEINS

2/6/137 (Item 137 from file: 434)  
07021076 Genuine Article#: AXA77 Number of References: 57  
Title: ANTIGENIC STRUCTURE OF HUMAN-HEMOGLOBIN - DELINEATION OF THE  
ANTIGENIC SITE (SITE 2) WITHIN REGION 41-65 OF THE ALPHA-CHAIN BY  
IMMUNOCHEMISTRY OF SYNTHETIC PEPTIDES

2/6/138 (Item 138 from file: 434)  
06199449 Genuine Article#: AAC19 Number of References: 137  
Title: POLYMORPHIC PHASE-BEHAVIOR OF PHOSPHOLIPID-MEMBRANES STUDIED BY  
INFRARED-SPECTROSCOPY

2/6/139 (Item 139 from file: 434)  
05965105 Genuine Article#: TE339 Number of References: 2004  
Title: FLUID INCLUSIONS

2/6/140 (Item 140 from file: 434)  
03129052 Genuine Article#: JB464 Number of References: 24  
Title: RESONANCE RAMAN METHOD FOR THE RAPID DETECTION AND IDENTIFICATION OF  
BACTERIA IN WATER

2/6/141 (Item 1 from file: 5)  
13583384 BIOSIS Number: 99583384  
Hydrogen-deuterium exchange observed in bacterial with resonance raman  
spectroscopy and its use for pathogen detection  
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 007 Ref. 118990

2/6/142 (Item 2 from file: 5)  
13559129 BIOSIS Number: 99559129  
Active site properties of the 3C proteinase from hepatitis A virus (a  
hybrid cysteine-serine protease) probed by Raman spectroscopy  
Print Number: Biological Abstracts Vol. 103 Iss. 012 Ref. 182557

2/6/143 (Item 3 from file: 5)  
12039163 BIOSIS Number: 98639163  
Reaction of cytochrome bo-3 with oxygen: Extra redox center(s) are  
present in the protein  
Print Number: Biological Abstracts Vol. 101 Iss. 004 Ref. 054908

2/6/144 (Item 4 from file: 5)  
12031519 BIOSIS Number: 98631519  
Dairy product analysis: Identification of microorganisms by mid-infrared  
spectroscopy and determination of constituents by raman spectroscopy  
Print Number: Biological Abstracts Vol. 101 Iss. 004 Ref. 047264

2/6/145 (Item 5 from file: 5)  
11922929 BIOSIS Number: 98522929  
Symmetric structural features and building site of the primary electron  
donor in the reaction center of Chlorobium  
Print Number: Biological Abstracts Vol. 100 Iss. 011 Ref. 173786

2/6/146 (Item 6 from file: 5)  
11689959 BIOSIS Number: 98289959  
Raman spectroscopy of the filamentous virus Ff (fd, fl, M13): Structural  
interpretation for coat protein aromatics  
Print Number: Biological Abstracts Vol. 100 Iss. 001 Ref. 014797

2/6/147 (Item 7 from file: 5)  
10404151 BIOSIS Number: 96004151  
STRUCTURAL STUDIES OF THE ENVELOPED DSRNA BACTERIOPHAGE PHI-06 OF  
PSEUDOMONAS-SYRINGAE BY RAMAN SPECTROSCOPY I. THE VIRION AND ITS MEMBRANE  
ENVELOPE

2/6/148 (Item 8 from file: 5)  
9113768 BIOSIS Number: 93098768  
RESEARCH ON CHROMATIC ALTERATIONS OF MARBLE FROM THE CERTOSA OF PAVIA  
NOTE II

2/6/149 (Item 9 from file: 5)  
7750626 BIOSIS Number: 90118626  
THE PHOTOPHYSICS AND PHOTOCHEMISTRY OF THE CAROTENOIDS

2/6/150 (Item 10 from file: 5)  
7711703 BIOSIS Number: 90079703  
FACTORS CONTROLLING THE EFFICIENCY OF ENERGY TRANSFER FROM CAROTENOIDS TO  
BACTERIOCHLOROPHYLL IN PURPLE PHOTOSYNTHETIC BACTERIA

2/6/151 (Item 11 from file: 5)  
7689603 BIOSIS Number: 90057603  
THE MATURATION-DEPENDENT CONFORMATIONAL CHANGE OF THE MAJOR CAPSID  
PROTEIN OF BACTERIOPHAGE T4 INVOLVES A SUBSTANTIAL CHANGE IN SECONDARY  
STRUCTURE

2/6/152 (Item 12 from file: 5)  
7682388 BIOSIS Number: 90050388  
STRUCTURAL STUDIES OF BEAN POD MOTTLE VIRUS CAPSID AND RNA IN CRYSTAL AND  
SOLUTION STATES BY LASER RAMAN SPECTROSCOPY

2/6/153 (Item 13 from file: 5)  
7632348 BIOSIS Number: 90000348  
UV RESONANCE RAMAN SPECTRA OF BACTERIA BACTERIAL SPORES PROTOPLASTS AND  
CALCIUM DIPICOLINATE

2/6/154 (Item 14 from file: 5)  
7424585 BIOSIS Number: 89075604  
SURFACE-ENHANCED RESONANCE RAMAN SCATTERING SPECTROSCOPY OF BACTERIAL  
PHOTOSYNTHETIC MEMBRANES ORIENTATION OF THE CAROTENOIDS OF  
~~RHODOBACTER-SPHAEROIDES 2.4.1~~

2/6/155 (Item 15 from file: 5)  
7367212 BIOSIS Number: 89018231  
PROTEIN-PROSTHETIC GROUP INTERACTIONS IN BACTERIAL REACTION CENTERS  
RESONANCE RAMAN SPECTROSCOPY OF THE REACTION CENTER OF  
RHODOPSEUDOMONAS-VIRIDIS

2/6/156 (Item 16 from file: 5)  
6874241 BIOSIS Number: 37068620

DETECTION AND IDENTIFICATION OF BACTERIA BY MEANS OF UV EXCITED RESONANCE  
RAMAN SPECTRA US PATENT-4847198. JULY 11 1989

2/6/157 (Item 17 from file: 5)  
6525679 BIOSIS Number: 85126200  
SURFACE-ENHANCED RESONANCE RAMAN SCATTERING SPECTROSCOPY OF BACTERIAL  
PHOTOSYNTHETIC MEMBRANES THE CAROTENOID OF RHODOSPIRILLUM-RUBRUM

2/6/158 (Item 18 from file: 5)  
5838553 BIOSIS Number: 83100860  
SPECTROSCOPIC AND KINETIC PROPERTIES OF AN OXYGEN-BINDING HEME PROTEIN  
FROM CHROMATIUM-VINOSUM

2/6/159 (Item 19 from file: 5)  
5389201 BIOSIS Number: 82034004  
CHARACTERISTICS AND VARIATIONS OF B-TYPE DNA CONFORMATIONS IN SOLUTION A  
QUANTITATIVE ANALYSIS OF RAMAN BAND INTENSITIES OF EIGHT DNA SPECIES

2/6/160 (Item 20 from file: 5)  
5289080 BIOSIS Number: 81056387  
TRANSIENT FLUORESCENCE IN SYNCHRONOUSLY DIVIDING ESCHERICHIA-COLI

2/6/161 (Item 21 from file: 5)  
4891595 BIOSIS Number: 80018906  
DEPENDENCE OF PURINE 8C-H EXCHANGE ON NUCLEIC-ACID CONFORMATION AND  
BASE-PAIRING GEOMETRY A DYNAMIC PROBE OF DNA AND RNA SECONDARY STRUCTURES

2/6/162 (Item 22 from file: 5)  
4881853 BIOSIS Number: 80009164  
PROTEIN-RNA INTERACTIONS IN BELLADONNA MOTTLE VIRUS INVESTIGATED BY LASER  
RAMAN SPECTROSCOPY

2/6/163 (Item 23 from file: 5)  
4831623 BIOSIS Number: 79073938  
QUANTITATIVE ANALYSIS OF NUCLEIC-ACIDS PROTEINS AND VIRUSES BY RAMAN BAND  
DECONVOLUTION

2/6/164 (Item 24 from file: 5)  
4776018 BIOSIS Number: 79018333  
~~RNA-PROTEIN INTERACTIONS AND SECONDARY STRUCTURES OF COWPEA CHLOROTIC  
MOTTLE VIRUS FOR IN-VITRO ASSEMBLY~~

2/6/165 (Item 25 from file: 5)  
4450784 BIOSIS Number: 78024607  
CHARACTERIZATION OF DNA STRUCTURES BY LASER RAMAN SPECTROSCOPY

2/6/166 (Item 26 from file: 5)  
4332053 BIOSIS Number: 77007380  
ANALYSIS OF DEPOSITS ON HIGH WATER CONTENT CONTACT LENSES

2/6/167 (Item 27 from file: 5)  
4125403 BIOSIS Number: 76075254  
CONFIGURATION OF THE CAROTENOID IN THE REACTION CENTERS OF PHOTOSYNTHETIC  
BACTERIA 2. COMPARISON OF THE RESONANCE RAMAN LINES OF THE REACTION CENTERS  
WITH THOSE OF THE 14 DIFFERENT CIS-TRANS ISOMERS OF BETA CAROTENE

2/6/168 (Item 28 from file: 5)  
3991178 BIOSIS Number: 75038537  
STRUCTURAL STUDIES OF PHAGE P-22 PRECURSOR PARTICLES AND PROTEINS BY  
LASER RAMAN SPECTROSCOPY

2/6/169 (Item 29 from file: 5)  
3989166 BIOSIS Number: 75036525  
IR EVIDENCE THAT THE SCHIFF BASE OF BACTERIO RHOD OPSIN IS PROTONATED  
BR-570 AND K INTERMEDIATES

2/6/170 (Item 30 from file: 5)  
3083001 BIOSIS Number: 70032908  
CHANGES IN THE CONTENT OF SULFHYDRYL AND DI SULFIDE SUBSTANCES IN PEA  
PISUM-SATIVUM CULTIVAR RAMAN INOCULATED WITH THE BEAN YELLOW MOSAIC VIRUS  
AFTER TREATMENT WITH 2 4-D AND BLADEX

2/6/171 (Item 1 from file: 155)  
09141431 97320154  
Resonance Raman spectroscopy of 2H-labelled spheroidenes in petroleum  
ether and in the Rhodobacter sphaeroides reaction centre.

2/6/172 (Item 2 from file: 155)  
09036660 97215844  
Influence of Asn/His L166 on the hydrogen-bonding pattern and redox  
potential of the primary donor of purple bacterial reaction centers.

2/6/173 (Item 3 from file: 155)  
08730006 94190875  
Resonance Raman spectroscopic evidence for the FeS4 and Fe-O-Fe sites in  
rubrerythrin from Desulfovibrio vulgaris.

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2/6/174 (Item 4 from file: 155)  
08354654 95383317  
Biochemical and spectroscopic characterization of the B800-850  
light-harvesting complex from Rhodobacter sulphidophilus and its B800-830  
spectral form.

2/6/175 (Item 5 from file: 155)  
08233614 95244467  
Raman spectroscopy of the filamentous virus Ff (fd, fl, M13): structural  
~~interpretation for coat protein aromatics~~ [published erratum appears in  
Biochemistry 1995 Jun 13;34(23):7780]

2/6/176 (Item 6 from file: 155)

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07921528 94245619

Aromatic amine dehydrogenase, a second tryptophan tryptophylquinone enzyme.

2/6/177 (Item 7 from file: 155)

07518413 93217986

Structural studies of the enveloped dsRNA bacteriophage phi 6 of *Pseudomonas syringae* by Raman spectroscopy. I. The virion and its membrane envelope.

2/6/178 (Item 8 from file: 155)

06851295 92031548

Resonance Raman spectra of plastocyanin and pseudoazurin: evidence for conserved cysteine ligand conformations in cupredoxins (blue copper proteins).

2/6/179 (Item 9 from file: 155)

06688731 91084539

Effects of pigment-protein interactions on the conformation of the primary electron acceptor in *Rhodobacter capsulatus* reaction centers.

2/6/180 (Item 10 from file: 155)

06256684 89026730

Cytochrome c peroxidase mutant active site structures probed by resonance Raman and infrared signatures of the CO adducts.

2/6/181 (Item 11 from file: 155)

06216263 87086758

Models for the structure of outer-membrane proteins of *Escherichia coli* derived from Raman spectroscopy and prediction methods.

2/6/182 (Item 12 from file: 155)

05935517 86177675

Immunochemistry, physical chemistry and biology of 2',5'-oligoadenylates.

2/6/183 (Item 13 from file: 155)

04935140 86243397

Characteristics and variations of B-type DNA conformations in solution: a quantitative analysis of Raman band intensities of eight DNAs.

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2/6/184 (Item 14 from file: 155)

03616366 83048941

Structural studies of P22 phage, precursor particles, and proteins by laser Raman spectroscopy.

2/6/185 (Item 1 from file: 654)

02663176

METHODS FOR THE DETECTION AND ISOLATION OF PROTEINS

FULL TEXT: 2046 lines

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2/6/186 (Item 2 from file: 654)  
02642664

DERIVATIZATION OF SOLID SUPPORTS AND METHODS FOR OLIGOMER SYNTHESIS  
[Affixing functional sites to the surface of a solid substrate]  
FULL TEXT: 1471 lines

2/6/187 (Item 3 from file: 654)  
02640745

ANALYTE DETECTION THROUGH OBSERVED OPTICAL MODULATION OF POLYMERIZED LIPID LAYERS  
[Contacting analyte with acetylenic polymer anchored to substrate and having terminal binding groups; receptor binding assay]  
FULL TEXT: 1671 lines

2/6/188 (Item 4 from file: 654)  
02629444

PURIFICATION OF INDUSTRIAL LUBRICATING AGENTS  
[Polymeric two-phase system for removing microorganisms]  
FULL TEXT: 810 lines

2/6/189 (Item 5 from file: 654)  
02625136

USE OF MULTIVALENT INORGANIC CATIONS IN THE ELECTROCHEMICAL TREATMENT OF NUCLEOTIC ACID CONTAINING SOLUTIONS  
[As promoter in denaturation of double stranded to single stranded material by applying voltage]  
FULL TEXT: 698 lines

2/6/190 (Item 6 from file: 654)  
02588769

ANTIBIOTIC SUSCEPTIBILITY TEST  
[Culture of cells and detection of Raman spectra and displaying ribosome peaks]  
FULL TEXT: 286 lines

2/6/191 (Item 7 from file: 654)  
02586344

DIRECTED EVOLUTION OF NOVEL BINDING PROTEINS  
[Genetic package, chimeric]  
FULL TEXT: 17681 lines

2/6/192 (Item 8 from file: 654)  
02557657

METHODS FOR MAKING A DEVICE FOR CONCURRENTLY PROCESSING MULTIPLE BIOLOGICAL CHIP ASSAYS  
[Chip plate with plurality of test wells]  
FULL TEXT: 648 lines

2/6/193 (Item 9 from file: 654)  
02555213

PROCESS FOR THE MEASUREMENT OF NUCLEIC ACIDS  
[Mixing sample with labelled common polynucleotide and polynucleotide probe comprising sequence complementary to part of polynucleotide]

FULL TEXT: 687 lines

2/6/194 (Item 10 from file: 654)  
02542995  
METHOD AND APPARATUS FOR SUSPENDING MICROPARTICLES  
[ Quadrupole electric field mass analyzer, detecting microorganisms used in  
biological warfare in aerosol]  
FULL TEXT: 352 lines

2/6/195 (Item 11 from file: 654)  
02538061  
ELECTROCHEMICAL DENATURATION OF DOUBLE-STRANDED NUCLEIC ACID  
[ Applying voltage to solution with electrode and converting portion to  
single-stranded form]  
FULL TEXT: 1058 lines

2/6/196 (Item 12 from file: 654)  
02528641  
REVERSE ANTIMICROBIAL PEPTIDES  
[Bactericides or fungicides]  
FULL TEXT: 4633 lines

2/6/197 (Item 13 from file: 654)  
02510323  
CHARACTERIZATION OF PARTICLES BY MODULATED DYNAMIC LIGHT SCATTERING  
FULL TEXT: 1419 lines

2/6/198 (Item 14 from file: 654)  
02486022  
METHOD OF PURIFYING WATER CONTROLLED BY LASER SCANNING  
[Photodetecting, radiating, computer processing, neutralizing]  
FULL TEXT: 294 lines

2/6/199 (Item 15 from file: 654)  
02481608  
LIQUID LAUNDRY DETERGENTS WITH CITRIC ACID, CELLULASE, AND BORICDIOL  
COMPLEX TO INHIBIT PROTEOLYTIC ENZYME  
[Boric acid and 1,2-propanediol added for storage stability of cellulase]  
FULL TEXT: 789 lines

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2/6/200 (Item 16 from file: 654)  
02474841  
ANALYTICAL SYSTEM USEFUL IN DIAGNOSIS OF THE CONDITION OF A DISEASE  
FULL TEXT: 566 lines

2/6/201 (Item 17 from file: 654)  
02470423  
SURFACTANT-ENHANCED LIGHT EMISSION- OR ABSORBANCE-BASED BINDING ASSAYS FOR  
POLYNUCLEIC ACIDS  
[ Cationic surfactants and labels of fluorescent compounds containing  
pyrene, naphthalene or anthracene with phosphate groups]  
FULL TEXT: 651 lines

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2/6/202 (Item 18 from file: 654)  
02434742  
CHARACTERIZATION OF PARTICLES BY MODULATED DYNAMIC LIGHT SCATTERING  
FULL TEXT: 1203 lines

2/6/203 (Item 19 from file: 654)  
02423360  
ANTIMICROBIAL PEPTIDES ACTIVE AGAINST PLANT PATHOGENS  
[Magainins]  
FULL TEXT: 3312 lines

2/6/204 (Item 20 from file: 654)  
02396402  
SURFACE-ENHANCED RAMAN SCATTERING (SERS) DOSIMETER AND PROBE  
FULL TEXT: 452 lines

2/6/205 (Item 21 from file: 654)  
02389265  
METHOD FOR PARTICULATE REAGENT SAMPLE TREATMENT  
[ Mixing sample with particulate reagent to form stable flowable suspension  
prior to introducing sample into analytical device; eliminates memory  
effects]  
FULL TEXT: 897 lines

2/6/206 (Item 22 from file: 654)  
02374688  
METHOD FOR THE DIAGNOSIS OF VIRULENT BACTERIA  
FULL TEXT: 852 lines

2/6/207 (Item 23 from file: 654)  
02294808  
PURIFICATION OF INDUSTRIAL LUBRICATING AGENTS  
[REMOVING MICROBIAL CONTAMINANTS FROM A LUBRICANT]  
FULL TEXT: 870 lines

2/6/208 (Item 24 from file: 654)  
02278715  
METHOD FOR DISTINGUISHING BETWEEN CALCIFIED ATHEROSCLEROTIC TISSUE AND  
FIBROUS ATHEROSCLEROTIC TISSUE OR NORMAL CARDIOVASCULAR TISSUE USING RAMAN  
SPECTROSCOPY  
FULL TEXT: 749 lines

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2/6/209 (Item 25 from file: 654)  
02247948  
LIGAND BINDING ASSAY FOR AN ANALYTE USING SURFACE-ENHANCED SCATTERING  
(SERS) SIGNAL  
[ Binding sample to label material which is active for light scattering,  
then measurement of signal intensity, spectrum analysis]  
FULL TEXT: 874 lines

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2/6/210 (Item 26 from file: 654)  
02197641  
DIRECTED EVOLUTION OF NOVEL BINDING PROTEINS  
FULL TEXT: 18179 lines

2/6/211 (Item 27 from file: 654)  
02182710  
METHOD OF MEASUREMENT IN BIOLOGICAL SYSTEMS  
[ Radioactive detection as labels, administering to host and isolation,  
measuring the isotopes]  
FULL TEXT: 1460 lines

2/6/212 (Item 28 from file: 654)  
02161735  
OPTICAL METHOD FOR MEASURING AN ANALYTE USING AREA-MODULATED LUMINESCENCE  
FULL TEXT: 616 lines

2/6/213 (Item 29 from file: 654)  
02124584  
MIXED LIGAND COMPLEXES AND USES THEREOF AS BINDING AGENTS AND PROBES TO DNA  
[Spectroscopically or photoactively determinable]  
FULL TEXT: 2996 lines

2/6/214 (Item 30 from file: 654)  
02110198  
RETICULATED CELLULOSE AND METHODS AND MICROORGANISMS FOR THE PRODUCTION  
THEREOF  
FULL TEXT: 1937 lines

2/6/215 (Item 31 from file: 654)  
02080308  
RESERVOIR CHEMICAL SENSORS  
[ Universal sensor for a variety of measurement techniques, detection of  
water pollutants, medical diagnosis]  
FULL TEXT: 1492 lines

2/6/216 (Item 32 from file: 654)  
02071588  
~~METHOD CONTROLLING A PROCESS BY IMPEDANCE ANALYSIS~~  
FULL TEXT: 481 lines

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2/6/217 (Item 33 from file: 654)  
02039140  
RETICULATED CELLULOSE AND METHODS AND MICROORGANISMS FOR THE PRODUCTION  
THEREOF  
[High purity Acetobacter, cellulose with high tensile strength]  
FULL TEXT: 1929 lines

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2/6/218 (Item 34 from file: 654)  
02028504  
METHODS OF DISCRIMINATING BETWEEN CONTAMINATED AND UNCONTAMINATED  
CONTAINERS

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FULL TEXT: 1164 lines

2/6/219 (Item 35 from file: 654)  
02015085  
FLUORESCENT CONJUGATES FOR ANALYSIS OF MOLECULES AND CELLS  
FULL TEXT: 676 lines

2/6/220 (Item 36 from file: 654)  
01982713  
AREA-MODULATED LUMINESCENCE (AML)  
FULL TEXT: 563 lines

2/6/221 (Item 37 from file: 654)  
01949832  
FLUORESCENT STOKES SHIFT PROBES FOR POLYNUCLEOTIDE HYBRIDIZATION  
[ Predetermined nucleotide base unit spacings between donor and acceptor  
fluorophores to provide increased sensitivity]  
FULL TEXT: 769 lines

2/6/222 (Item 38 from file: 654)  
01898990  
MODIFICATION OF CELLULOSE NORMALLY SYNTHESIZED BY CELLULOSE-PRODUCING  
MICROORGANISMS  
[ PLATING OUT CELLULOSE II-PRODUCING ACETOBACTER, INCUBATING, INOCULATING,  
SELECTING]  
FULL TEXT: 1162 lines

2/6/223 (Item 39 from file: 654)  
01886506  
WATER SOLUBLE COMPLEXES OF POLYVINYLPYRROLIDONE, HYDROGEN CHLORIDE AND  
IODINE AND PROCESS FOR MAKING THE SAME  
FULL TEXT: 268 lines

2/6/224 (Item 1 from file: 73)  
10395082 EMBASE No: 97204496  
Structure and interactions of the single-stranded DNA genome of  
filamentous virus fd: Investigation by ultraviolet resonance Raman  
spectroscopy

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2/6/225 (Item 2 from file: 73)  
9997452 EMBASE No: 96176550  
Polyphasic taxonomy, a consensus approach to bacterial systematics

2/6/226 (Item 3 from file: 73)  
9940683 EMBASE No: 96122975  
Erratum: Biosynthesis of topa quinone cofactor in bacterial amine  
oxidases. Solvent origin of C-2 oxygen determined by Raman spectroscopy  
(Journal of Biological Chemistry (1996) 271 (4718-4724))

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2/6/227 (Item 4 from file: 73)  
9935606 EMBASE No: 96119709

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Structure, interactions and dynamics of PRDI virus II. Organization of the viral membrane and DNA

2/6/228 (Item 5 from file: 73)  
9857453 EMBASE No: 96037545

Microcirculating system for simultaneous determination of Raman and absorption spectra of enzymatic reaction intermediates and its application to the reaction of cytochrome c oxidase with hydrogen peroxide

2/6/229 (Item 6 from file: 73)  
9561698 EMBASE No: 95128764

Hepatitis core antigen produced in Escherichia coli: Subunit composition, conformational analysis, and in vitro capsid assembly

2/6/230 (Item 7 from file: 73)  
8857650 EMBASE No: 93161370

Structural studies of the enveloped dsRNA bacteriophage diameter6 of Pseudomonas syringae by Raman spectroscopy. I. The virion and its membrane envelope

2/6/231 (Item 8 from file: 73)  
642935 EMBASE No: 77019998

Identification of bacterial, normal and tumour mammalian cells by laser Raman spectroscopy

2/6/232 (Item 1 from file: 76)  
02047148 3925882  
Surface-enhanced Raman gene probes

2/6/233 (Item 2 from file: 76)  
02024379 3893529

Cysteine conformation and sulfhydryl interactions in proteins and viruses.  
2. Normal coordinate analysis of the cysteine side chain in model compounds

2/6/234 (Item 3 from file: 76)  
01971546 3820488

A methylnickel intermediate in a bimetallic mechanism of acetyl-coenzyme A synthesis by anaerobic bacteria

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2/6/235 (Item 4 from file: 76)  
01254225 2001683

Detection and identification of bacteria by means of ultra-violet excited resonance Raman spectroscopy.

2/6/236 (Item 5 from file: 76)  
01017769 1485842

Bacteriorhodopsin: Fourier transform infrared methods for studies of protonation of carboxyl groups.

BIOMEMBRANES. PART O. PROTONS AND WATER: STRUCTURE AND TRANSLOCATION.

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2/6/237 (Item 6 from file: 76)  
00936268 1233596  
Determination of retinal chromophore structure in bacteriorhodopsin with  
resonance Raman spectroscopy.

2/6/238 (Item 7 from file: 76)  
00915837 1151426  
Dissipative respiration and Raman spectroscopy: A possible guide to latent  
viruses and the oncogenic process.

2/6/239 (Item 1 from file: 265)  
00310435  
IDENTIFYING NO.: 5R01GM51962-03 AGENCY CODE: CRISP  
FUNCTIONS AND PROPERTIES OF (2FE-2S) CENTERS

2/6/240 (Item 2 from file: 265)  
00310128  
IDENTIFYING NO.: 2R01GM50776-23 AGENCY CODE: CRISP  
MOLECULAR STRUCTURE AND INTERACTIONS OF VIRUSES

2/6/241 (Item 3 from file: 265)  
00309613  
IDENTIFYING NO.: 5R01GM48254-04 AGENCY CODE: CRISP  
REACTION CENTER DYNAMICS

2/6/242 (Item 4 from file: 265)  
00309543  
IDENTIFYING NO.: 5R01GM47980-04 AGENCY CODE: CRISP  
SUBUNIT INTERACTIONS DURING ICOSAEDRAL CAPSID ASSEMBLY

2/6/243 (Item 5 from file: 265)  
00309165  
IDENTIFYING NO.: 5R01GM45597-07 AGENCY CODE: CRISP  
SITE-SPECIFIC PROPERTIES OF A UNIQUE IRON-SULFUR PROTEIN

2/6/244 (Item 6 from file: 265)  
00308689  
IDENTIFYING NO.: 5R01GM40526-10 AGENCY CODE: CRISP  
THEORETICAL STUDIES OF METALLOPROTEIN CHROMOPHORES

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2/6/245 (Item 7 from file: 265)  
00308679  
IDENTIFYING NO.: 2R01GM40466-10 AGENCY CODE: CRISP  
METHANE MONOOXYGENASE STRUCTURE AND MECHANISM

2/6/246 (Item 8 from file: 265)  
00308623  
IDENTIFYING NO.: 5R01GM39781-09 AGENCY CODE: CRISP  
VIBRATIONAL STUDIES OF ENERGY TRANSDUCING PROTEINS

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2/6/247 (Item 9 from file: 265)  
00308210

IDENTIFYING NO.: 2R01GM35394-13 AGENCY CODE: CRISP  
MECHANISMS INVOLVED IN FLAVIN-LINKED OXYGEN METABOLISM

2/6/248 (Item 10 from file: 265)  
00307633

IDENTIFYING NO.: 5R01GM28211-16 AGENCY CODE: CRISP  
REGULATION AND STRUCTURE OF THE MER OPERON

2/6/249 (Item 11 from file: 265)  
00286529

IDENTIFYING NO.: 1R15AI41217-01 AGENCY CODE: CRISP  
HEME BINDING MECHANISM OF HBPA OF HAEMOPHILUS INFLUENZAE

2/6/250 (Item 12 from file: 265)  
00181124

IDENTIFYING NO.: 9603300; 9603300 AGENCY CODE: NSF  
U.S.-Japan Cooperative Science: Elucidation of a Coupling Mechanism of  
Electron and Proton Transfers in Photosynthetic

2/6/251 (Item 13 from file: 265)  
00177023

IDENTIFYING NO.: 9522189; 9522189 AGENCY CODE: NSF  
SBIR Phase II: Critical Molecule Detector

2/6/252 (Item 1 from file: 144)  
12051168 PASCAL No.: 95-0247306

Modelisation du site actif des cytochromes de type C par la  
microperoxydase-8 etude par diffusion Raman de resonance. Structure et  
environnement de l'heme des cytochromes bacteriens C' et C SUB 2

(Modelling of the active site of C-type cytochromes with  
microperoxidase-8 a resonance Raman study. Structure and heme environment  
of bacterial cytochromes C' and C SUB 2 )

2/6/253 (Item 2 from file: 144)  
11938664 PASCAL No.: 95-0117842

On the chemical detection of bioaerosols  
~~Bioaerosols~~

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2/6/254 (Item 3 from file: 144)  
11227760 PASCAL No.: 94-0045525

Raman dynamic probe of hydrogen exchange in bean pod mottle virus :  
base-specific retardation of exchange in packaged ssRNA

2/6/255 (Item 4 from file: 144)  
10885308 ~~PASCAL No.: 93-0394672~~

Structural studies of the enveloped dsRNA bacteriophage OE6 of  
Pseudomonas syringae by Raman spectroscopy. I: The virion and its membrane  
envelope

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2/6/256 (Item 5 from file: 144)  
10592355 PASCAL No.: 93-0101607  
UV resonance Raman studies of bacteria

2/6/257 (Item 6 from file: 144)  
05353068 PASCAL No.: 85-0053175  
Determination of retinal Schiff base configuration in bacteriorhodopsin

2/6/258 (Item 7 from file: 144)  
03479473 PASCAL No.: 81-0519987  
ESCHERICHIA COLI RIBOSOME UNFOLDING IN 1 OW MG SUP 2+ SOLUTION OBSERVED  
BY LASER RAMAN SPECTROSCOPY AND ELECTRON MICROSCOPY

2/6/259 (Item 1 from file: 156)  
03187796 Subfile: NTIS-PB80-138522  
A Resonance Raman Method for the Rapid Detection, Identification and  
Quantitation of Bacteria in Sewage and Natural Waters

2/6/260 (Item 2 from file: 156)  
02428329 Subfile: CRISP-97-GM28211-15  
REGULATION AND STRUCTURE OF THE MER OPERON

2/6/261 (Item 3 from file: 156)  
01299093 Subfile: NTIS-AD-A158 218-8  
New Physical Methods for Biological Aerosol Detection.

2/6/262 (Item 4 from file: 156)  
01295195 Subfile: NTIS-PB85-214864  
Rapid Detection and Identification of Bacteria in Sewage and Natural  
Waters by Means of Time-Resolved Laser Spectroscopies,

2/6/263 (Item 1 from file: 6)  
1832350 NTIS Accession Number: DE94018174/XAB  
Direct colorimetric detection of virus by a polymerized bilayer assembly  
NTIS Prices: PC A03/MF A01

~~2/6/264 (Item 2 from file: 6)  
1608966 NTIS Accession Number: AD A249 811/1/XAB  
Rapid Detection of Single Bacterial Cells by Deep UV Micro Raman  
Spectroscopy  
(Final rept. 1 Oct 88-31 Dec 91)  
NTIS Prices: PC A03/MF A01~~

~~2/6/265 (Item 3 from file: 6)  
1334891 NTIS Accession Number: AD-A194 719/1/XAB  
Rapid Detection of Bacteria and Other Microorganisms: A Basic Study in  
the Application of Resonance Raman and Time-Resolved Fluorescence  
Spectroscopies  
(Rept. for 15 Oct 84-14 Feb 88)  
NTIS Prices: PC A03/MF A01~~

2/6/266 (Item 4 from file: 6)  
1206187 NTIS Accession Number: AD-A168 965/2/XAB  
Resonance Raman Microprobe Study of Chromobacteria in Water  
NTIS Prices: PC A02/MF A01

2/6/267 (Item 5 from file: 6)  
1155393 NTIS Accession Number: DE85015672/XAB  
Raman Activity in Synchronously Dividing Bacteria  
NTIS Prices: PC A02/MF A01

2/6/268 (Item 6 from file: 6)  
1128616 NTIS Accession Number: AD-A153 549/1/XAB  
Basic Study to Assess the Potential Usefulness of Resonance Raman Spectroscopy as a Means of Rapidly Detecting and Identifying Bacteria and other Microorganisms  
(Final rept. 1 Oct 83-31 Dec 84)  
NTIS Prices: PC A02/MF A01

2/6/269 (Item 7 from file: 6)  
550639 NTIS Accession Number: PB-261 358/6  
Laser Methods of Rapid Detection, Identification, and Quantitation of Human Enteric Viruses in Sewage and Rivers  
(Final rept. 1 Jan 75-1 Sep 76)  
NTIS Prices: PC A03/MF A01

2/6/270 (Item 8 from file: 6)  
550635 NTIS Accession Number: PB-261 354/5  
Water-Borne Viruses: Their Characterization by Raman Spectroscopy  
(Project completion rept. Mar 74-Sep 76)  
NTIS Prices: PC A02/MF A01

2/6/271 (Item 9 from file: 6)  
520759 NTIS Accession Number: AD-917 105/9  
Preliminary Evaluation of LIDAR Techniques for Advance Warning of Biological Threats  
(Technical rept.)  
Distribution limitation now removed.  
NTIS Prices: PC A04/MF A01

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2/6/272 (Item 1 from file: 2)  
5443507 INSPEC Abstract Number: A9702-8715M-003  
Title: Detection of hepatitis B surface protein by means of laser spectroscopy  
Copyright 1996, IEE

2/6/273 (Item 2 from file: 2)  
04099425 INSPEC Abstract Number: A9207-8715M-035, C9204-7320-028  
Title: Computerized technique for the analysis of weak signals in UV Raman scattering from biological molecules

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2/6/274 (Item 3 from file: 2)  
04092609 INSPEC Abstract Number: A9207-8725-001  
Title: Raman scattering spectra of living bacteria at different stages of development

2/6/275 (Item 1 from file: 35)  
01557124 ORDER NO: AAD97-17190  
RAMAN AND POLARIZED RAMAN SPECTROSCOPY OF THE FILAMENTOUS VIRUS FF:  
STRUCTURAL CONCLUSIONS AND A MOLECULAR MODEL

2/6/276 (Item 2 from file: 35)  
01455762 ORDER NO: AADAA-I9600890  
INVESTIGATION OF STRUCTURES AND MECHANISMS OF METALLOPROTEINS (BLUE COPPER PROTEINS)

2/6/277 (Item 3 from file: 35)  
01450765 ORDER NO: AADAA-I0576520  
THE INFLUENCE OF HEMICELLULOSES ON THE STRUCTURE OF BACTERIAL CELLULOSE (ACETOBACTER XYLINUM)

2/6/278 (Item 4 from file: 35)  
01367121 ORDER NO: AAD94-21895  
APPLICATIONS OF UV RESONANCE RAMAN AND MICRO-RAMAN SPECTROSCOPY FOR THE RAPID CHARACTERIZATION OF BACTERIA AND THE STUDY OF POLYMERS (RESONANCE RAMAN SPECTROSCOPY)

2/6/279 (Item 5 from file: 35)  
01300149 ORDER NO: AAD93-20705  
SPECTROSCOPIC CHARACTERIZATION OF NICKEL-CONTAINING F(430) AND S-METHYL COENZYME M REDUCTASE (METHYLREDUCTASE, NICKEL TETRAPYRROLE COFACTOR)

2/6/280 (Item 6 from file: 35)  
01257807 ORDER NO: AAD92-39640  
INVESTIGATION OF MOLECULAR RECOGNITION BY STATIC AND DYNAMIC METHODS OF RAMAN SPECTROSCOPY: APPLICATIONS TO RNA PLANT VIRUSES AND DNA-PROTEIN COMPLEXES (BEAN POD MOTTLE VIRUS)

2/6/281 (Item 7 from file: 35)  
~~01230782 ORDER NO: NOT AVAILABLE FROM UNIVERSITY MICROFILMS INT'L.~~  
~~INVESTIGATIONS OF BIOLOGICAL STRUCTURES USING DIFFRACTION AND SCATTERING METHODS~~

2/6/282 (Item 8 from file: 35)  
01213630 ORDER NO: AAD92-12179  
APPLICATION OF RESONANCE RAMAN AND SURFACE ENHANCED RESONANCE RAMAN SPECTROSCOPIES TO THE CHARACTERIZATION OF BIOMOLECULES: CHLOROPHYLL AND HYPERICIN (RESONANCE RAMAN SPECTROSCOPY)

2/6/283 (Item 9 from file: 35)  
01180921 ORDER NO: NOT AVAILABLE FROM UNIVERSITY MICROFILMS INT'L.  
STRUCTURAL COMPONENTS OF PRD1, A MEMBRANE-CONTAINING BACTERIOPHAGE

INFECTING ESCHERICHIA COLI

2/6/284 (Item 10 from file: 35)  
01159860 ORDER NO: AAD91-09467  
ULTRAVIOLET RESONANCE RAMAN SPECTROSCOPIC STUDIES OF BACTERIA AND BACTERIAL SPORES

2/6/285 (Item 11 from file: 35)  
1045674 ORDER NO: AAD89-04658  
IDENTIFICATION OF METAL LIGANDS IN AMICYANIN, HEMOCYANIN AND CATALASE BY RESONANCE RAMAN SPECTROSCOPY

2/6/286 (Item 12 from file: 35)  
0969288 ORDER NO: AAD87-23940  
LASER DIFFERENCE SPECTROSCOPY OF SUPERCOILED AND RELAXED COLE1 PLASMID

2/6/287 (Item 13 from file: 35)  
922061 ORDER NO: AAD86-16071  
BIOLOGICAL EFFECTS OF MILLIMETER-WAVE IRRADIATION (MICROWAVES, YEAST, RAMAN, LIPOSOMES)

2/6/288 (Item 1 from file: 98)  
03281233 H.W. WILSON RECORD NUMBER: BGS196031233 (USE FORMAT 7 FOR FULLTEXT)  
Remote sensing of algal bloom dynamics.  
WORD COUNT: 6960

2/6/289 (Item 2 from file: 98)  
03051081 H.W. WILSON RECORD NUMBER: BGS195051081 (USE FORMAT 7 FOR FULLTEXT)  
Peptides as weapons against microorganisms in the chemical defense system of vertebrates.  
WORD COUNT: 11053

2/6/290 (Item 1 from file: 8)  
04462144  
Title: Optical spectroscopy vs. the surgical suite

---

2/6/291 (Item 2 from file: 8)  
02727276  
Title: Ultra-violet resonance Raman spectra of live cyanobacteria with 222.5-251.0 nm pulsed laser excitation.

2/6/292 (Item 3 from file: 8)  
01970107  
Title: RAMAN SPECTROSCOPY OF BACILLUS MEGATERIUM USING AN OPTICAL MULTI-CHANNEL ANALYZER.

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2/6/293 (Item 4 from file: 8)

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00445398

Title: INVESTIGATION OF DNA'S BY A NEW PSEUDO-RAMAN TECHNIQUE.

2/6/294 (Item 1 from file: 103)

02895148 NOV-90-017531; EDB-90-112390; ERA-15-039793

Title: Fourier transform infrared and resonance Raman characterization of cytochrome Ba sub 3 from Thermus thermophilus

Title: Raman scattering, luminescence, and spectroscopic instrumentation in technology

Original Series Title: SPIE-Volume 1055

2/6/295 (Item 2 from file: 103)

01779202 EDB-86-102916

Title: Time-resolved resonance Raman spectroscopy of photobiological and photochemical transients

2/6/296 (Item 3 from file: 103)

01433264 ERA-09-038085; EDB-84-131066

Title: Resonance Raman spectra of picosecond transient: application to bacteriorhodopsin

Title: Picosecond phenomena III

Series/Collection Title: UCLA-34P278-33

2/6/297 (Item 1 from file: 348)

00812910

**ORDER fax of complete patent from KR SourceOne. See HELP ORDER348**

S-phenyl-L-cysteine production process

Verfahren zur Herstellung von S-Phenyl-L-Cystein

Procede de production de la S-phenyl-L-cysteine

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
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CLAIMS A	(English)	EPAB97	407
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SPEC A	(English)	EPAB97	4768
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Total word count - document A	5175
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Total word count - document B	0
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Total word count - documents A + B	5175
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2/6/298 (Item 2 from file: 348)

00513064

**ORDER fax of complete patent from KR SourceOne. See HELP ORDER348**

~~Antimicrobial peptides and their use against plant pathogens.~~

Antimikrobielle Peptide und ihre Verwendung gegen Pflanzenpathogene.

Peptides antimicrobiens et leur utilisation contre les pathogenes des plantes.

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
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CLAIMS A	(English)	EPABF1	2104
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SPEC A	(English)	EPABF1	41191
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Total word count - document A	43295
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Total word count - document B	0
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Total word count - documents A + B	43295
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2/6/299 (Item 3 from file: 348)  
00467470

**ORDER fax of complete patent from KR SourceOne. See HELP ORDER348**

Antimicrobial peptides active against plant pathogens, their use and screening methods pertaining thereto.

Antimikrobielle Peptide wirksam gegen Pflanzenpathogene, ihre Verwendung und auf sie bezogene Nachweismethoden.

Peptides antimicrobiens actifs contre les pathogenes des plantes, leur utilisation et methodes d'examen collectif appartenant a ces-ci.

LANGUAGE (Publication,Procedural,Application): English; English; English

**FULLTEXT AVAILABILITY:**

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	7428
SPEC A	(English)	EPABF1	30305
Total word count - document A			37733
Total word count - document B			0
Total word count - documents A + B			37733

2/6/300 (Item 4 from file: 348)  
00405208

**ORDER fax of complete patent from KR SourceOne. See HELP ORDER348**

A new method for the diagnosis of virulent bacteria.

Methode fur die Diagnose von virulenten Bakterien.

Methode de diagnostic de bacterie virulente.

LANGUAGE (Publication,Procedural,Application): English; English; English

**FULLTEXT AVAILABILITY:**

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	1028
SPEC A	(English)	EPABF1	5303
Total word count - document A			6331
Total word count - document B			0
Total word count - documents A + B			6331

2/6/301 (Item 5 from file: 348)  
00377422

**ORDER fax of complete patent from KR SourceOne. See HELP ORDER348**

Characterization of particles by modulated dynamic light scattering.

Kennzeichnung von Teilchen durch modulierte dynamische Lichtstreuung.

Caracterisation de particules par diffusion dynamique modulee de lumiere.

LANGUAGE (Publication,Procedural,Application): English; English; English

**FULLTEXT AVAILABILITY:**

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	1853
CLAIMS B	(English)	EPAB95	1244
CLAIMS B	(German)	EPAB95	1100
CLAIMS B	(French)	EPAB95	1397
SPEC A	(English)	EPABF1	8277
SPEC B	(English)	EPAB95	8180
Total word count - document A			10131
Total word count - document B			11921
Total word count - documents A + B			22052

~~2/6/302 (Item 6 from file: 348)~~  
~~00313746~~

~~**ORDER fax of complete patent from KR SourceOne. See HELP ORDER348**~~

~~Synthetic polypeptides.~~

~~Synthetische Polypeptide.~~

Polypeptides synthétiques.

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	891
SPEC A	(English)	EPABF1	3486
Total word count - document A			4377
Total word count - document B			0
Total word count - documents A + B			4377

2/6/303 (Item 7 from file: 348)

00281819

**ORDER fax of complete patent from KR SourceOne. See HELP ORDER348**

METHODS OF DISCRIMINATING BETWEEN CONTAMINATED AND UNCONTAMINATED CONTAINERS.

VERFAHREN ZUR UNTERSCHIEDUNG ZWISCHEN VERSCHMUTZTEN UND NICHT-VERSCHMUTZTEN. BEHALTERN.

PROCEDES POUR DIFFERENCIER DES RECIPIENTS CONTAMINES DE RECIPIENTS NON CONTAMINES.

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPBBF1	991
CLAIMS B	(German)	EPBBF1	921
CLAIMS B	(French)	EPBBF1	1132
SPEC B	(English)	EPBBF1	5548
Total word count - document A			0
Total word count - document B			8592
Total word count - documents A + B			8592

2/6/304 (Item 8 from file: 348)

00244456

**ORDER fax of complete patent from KR SourceOne. See HELP ORDER348**

Competitive homogeneous Assay.

Kompetitiver homogener Test.

Dosage homogene concomitant.

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPBBF1	973
CLAIMS B	(German)	EPBBF1	974
CLAIMS B	(French)	EPBBF1	1095
SPEC B	(English)	EPBBF1	11751
Total word count - document A			0
Total word count - document B			14793
Total word count - documents A + B			14793

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2/6/305 (Item 9 from file: 348)

00211681

**ORDER fax of complete patent from KR SourceOne. See HELP ORDER348**

Fluorescent stokes shift probes for polynucleotide hybridization assays.

Fluoreszierende stokesche Shift-Sonden für Polynucleotidhybridisationsproben.

Sondes fluorescentes du type déplacement de stokes pour les essais d'hybridisation des polynucleotides.

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

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Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPBBF1	534
CLAIMS B	(German)	EPBBF1	459
CLAIMS B	(French)	EPBBF1	578
SPEC B	(English)	EPBBF1	5607
Total word count - document A			0
Total word count - document B			7178
Total word count - documents A + B			7178

2/6/306 (Item 1 from file: 653)  
01827736  
BIOLOGICAL PARTICLE IDENTIFICATION APPARATUS  
FULL TEXT: 864 lines

2/6/307 (Item 2 from file: 653)  
01804615  
SHEETED PRODUCTS FORMED FROM RETICULATED MICROBIAL CELLULOSE  
FULL TEXT: 1938 lines

2/6/308 (Item 3 from file: 653)  
01800311  
FLUORESCENT CONJUGATES FOR ANALYSIS OF MOLECULES AND CELLS  
FULL TEXT: 687 lines

2/6/309 (Item 4 from file: 653)  
01786978  
DETECTION AND IDENTIFICATION OF BACTERIA BY MEANS OF ULTRA-VIOLET EXCITED  
RESONANCE RAMAN SPECTRA  
[SPECTRUM ANALYSIS]  
FULL TEXT: 305 lines

2/6/310 (Item 5 from file: 653)  
01768763  
METHODS OF DISCRIMINATING BETWEEN CONTAMINATED AND UNCONTAMINATED  
CONTAINERS  
[PLASTIC BEVERAGE BOTTLES]  
FULL TEXT: 658 lines

2/6/311 (Item 6 from file: 653)  
01463405  
ANTIVIRAL AGENT  
[ALKALI OR ALKALINE EARTH METAL OR AMMONIUM SALT OF  
9-ANTIMONIO-III-21-TUNGSTO-VI-SODATE]  
FULL TEXT: 1009 lines

2/6/312 (Item 7 from file: 653)  
01457753  
PHYCOBILIPROTEIN FLUORESCENT CONJUGATES  
FULL TEXT: 326 lines

2/6/313 (Item 8 from file: 653)  
01433986

FLUORESCENT IMMUNOASSAY EMPLOYING A PHYCOBILIPROTEIN LABELED LIGAND OR RECEPTOR

[DETECTION OF A MEMBER]

FULL TEXT: 690 lines

2/6/314 (Item 9 from file: 653)

01354455

APPARATUS FOR DETECTING OIL IN WATER

FULL TEXT: 267 lines

2/6/315 (Item 1 from file: 53)

00469101 FOODLINE ACCESSION NUMBER: 444081

Food microbiology: abstracts P80-P92.

2/6/316 (Item 2 from file: 53)

00297325 FOODLINE ACCESSION NUMBER: 319732

Encyclopaedia of food science, food technology and nutrition, Vol. 7.

2/6/317 (Item 3 from file: 53)

00277622 FOODLINE ACCESSION NUMBER: 290616

Modern techniques for rapid microbiological analysis.

2/6/318 (Item 4 from file: 53)

00277600 FOODLINE ACCESSION NUMBER: 290593

UV Resonance Raman spectroscopic detection and identification of bacteria and other microorganisms.

2/6/319 (Item 5 from file: 53)

00274579 FOODLINE ACCESSION NUMBER: 287463

The identification, interactions and structure of viruses by Raman spectroscopy.

2/6/320 (Item 6 from file: 53)

00086674 FOODLINE ACCESSION NUMBER: 67619

Resonance raman spectroscopy in the study of carotene-containing biomolecules and microorganisms.

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~~2/6/321 (Item 1 from file: 148)~~

~~08970319 SUPPLIER NUMBER: 18691407 (USE FORMAT 7 OR 9 FOR FULL TEXT)~~

~~Biotechnology. (R&D Universe of Innovations)~~

~~WORD COUNT: 1203 LINE COUNT: 00103~~

---

2/6/322 (Item 2 from file: 148)

08918794 SUPPLIER NUMBER: 18535112 (USE FORMAT 7 OR 9 FOR FULL TEXT)

Bioengineering medicine's future. (diagnostic and therapeutic innovations) (includes related article on industrial research and development)

WORD COUNT: 1763 LINE COUNT: 00150

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2/6/323 (Item 3 from file: 148)

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08410038 SUPPLIER NUMBER: 17920946 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
Toxic gas generation from plastic mattresses and sudden infant death  
syndrome.  
WORD COUNT: 3749 LINE COUNT: 00304

2/6/324 (Item 4 from file: 148)  
07974437 SUPPLIER NUMBER: 14942318 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
Dose response in the treatment of breast cancer. (Viewpoint)  
WORD COUNT: 2743 LINE COUNT: 00247

2/6/325 (Item 5 from file: 148)  
06813504 SUPPLIER NUMBER: 14522762 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
1993 R&D 100 awards: technology's brightest stars: these winners sparkle!  
(Research and Development magazine)  
WORD COUNT: 12635 LINE COUNT: 01133

2/6/326 (Item 6 from file: 148)  
05925941 SUPPLIER NUMBER: 13330630 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
Recent advances in environmental sensing.  
WORD COUNT: 2341 LINE COUNT: 00194

2/6/327 (Item 7 from file: 148)  
04636233 SUPPLIER NUMBER: 09022957 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
Evaluation of hematuria in adults. (State of the art/review)  
WORD COUNT: 5215 LINE COUNT: 00431

2/6/328 (Item 1 from file: 62)  
00643279  
Polarized Raman spectra of oriented fibers of A DNA and B DNA:  
Anisotropic and isotropic local Raman tensors of base and backbone  
vibrations

2/6/329 (Item 2 from file: 62)  
00325452  
An ultraviolet (242 nm excitation) resonance Raman study of live  
bacteria and bacterial components

2/6/330 (Item 3 from file: 62)  
00117316  
~~A resonance Raman method for the rapid detection and identification of~~  
bacteria in water

2/6/331 (Item 1 from file: 51)  
00330811 87-01-b0003 SUBFILE: FSTA  
Instrumental methods for rapid microbiological analysis.

2/6/332 (Item 1 from file: 351)  
011336334  
WPI Acc No: 97-314239/199729  
Measurement of survival of sealed freeze-dried microorganism without  
breaking - by subjecting to Raman spectrum analysis

2/6/333 (Item 2 from file: 351)  
009915814

WPI Acc No: 94-183524/199422

Determining effectiveness of antibiotics against bacteria - e.g. using  
ultraviolet resonance Raman spectroscopy

2/6/334 (Item 3 from file: 351)  
007990618 **Image available**

WPI Acc No: 89-255730/198935

Detection and identification of bacteria - by using emitted light energy,  
resonance enhanced Raman scattering to produce characteristic spectra

2/6/335 (Item 4 from file: 351)  
007088254

WPI Acc No: 87-088251/198713

Fluorescence detection electrokinetic sepn. - using electro-osmotic  
pumping and laser excitation to excite fluorescence in sample

2/6/336 (Item 1 from file: 158)  
00255963 DIOGENES RECORD NUMBER: 100854

GUIDELINE FOR SUBMITTING SUPPORTING DOCUMENTATION IN DRUG APPLICATIONS  
FOR THE MANUFACTURE OF DRUG SUBSTANCES (2/87) PP: 63.

WORD COUNT: 10843

2/6/337 (Item 2 from file: 158)  
00089402 DIOGENES RECORD NUMBER: 5100854

GUIDELINES SUBMITTING SUPPORTING DOCUMENTATION IN DRUG APPLICATIONS FOR  
MANUFACTURE OF DRUG SUBSTANCES PP: 64.

WORD COUNT: 10879

2/6/338 (Item 3 from file: 158)  
00015843 DIOGENES RECORD NUMBER: 00044543

DRAFT GL FOR THE MFG OF DRUG SUBSTANCES 4/85 (#5) PP: 28

WORD COUNT: 7319

2/6/339 (Item 1 from file: 636)  
02783788

SUBJECT: CENTER FOR CELLULAR AND MOLECULAR BIOLOGY, HYDERABAD

WORD COUNT: 1603

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2/6/340 (Item 2 from file: 636)  
02266343

Patent Listings--ONCOLOGY

WORD COUNT: 215

2/6/341 (Item 3 from file: 636)  
01404093

PERU: 'HAIRY POTATO' BATTLES PLAGUES

WORD COUNT: 613

---

2/6/342 (Item 1 from file: 16)  
03950253  
RECENT ADVANCES IN ENVIRONMENTAL SENSING  
\*FULL TEXT AVAILABLE IN FORMAT 7 OR 9\* WORD COUNT: 2150

2/6/343 (Item 2 from file: 16)  
00504437  
Bacteria in drinking water can be detected and quantified with laser induced resonance Raman spectroscopy, according to chemist WH Nelson of the U of Rhode Island.

2/6/344 (Item 1 from file: 77)  
1859488  
Supplier Accession Number: 85059488 V13N10  
Detection of bacteria by means of resonance Raman and time resolved fluorescence spectroscopies

2/6/345 (Item 1 from file: 340)  
2781513 9628518  
C/ ANTIBIOTIC SUSCEPTIBILITY TEST; CULTURE OF CELLS AND DETECTION OF RAMAN SPECTRA AND DISPLAYING RIBOSOME PEAKS

2/6/346 (Item 2 from file: 340)  
1961103 8915829  
C/ DETECTION AND INDENTIFICATION OF BACTERIA BY MEANS OF ULTRA-VIOLET EXCITED RESONANCE RAMAN SPECTRA; SPECTRUM ANALYSIS

2/6/347 (Item 1 from file: 388)  
00001974

Defense Research Sciences

Binder: PROGRAM ELEMENT DESCRIPTIVE SUMMARY - FY1993  
Service: ARMY  
Pub. Date: August 18, 1992  
Word Count: 12119  
Pgm.Element: 0601102A

\* FOR FULL TEXT, USE FORMAT 7 OR 9 \*

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2/6/348 (Item 2 from file: 388)  
00000001

DEFENSE RESEARCH SCIENCES

Binder: PROGRAM ELEMENT DESCRIPTIVE SUMMARY - FY1989  
Service: Army  
Pub. Date: September 22, 1988  
Word Count: 5689  
Pgm.Element: 0601102A

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\* FOR FULL TEXT, USE FORMAT 7 OR 9 \*

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2/6/349 (Item 1 from file: 442)  
00085106

Pathological Case of the Month (ARTICLE)

LINE COUNT: 00104

2/6/350 (Item 1 from file: 669)  
00577767  
Export Administration Regulation; Simplification of Export Administration  
Regulations

WORD COUNT: 452,584

2/6/351 (Item 2 from file: 669)  
00413543  
Revision of Commodity Control List

WORD COUNT: 106,723

2/6/352 (Item 1 from file: 65)  
01206785 INSIDE CONFERENCE ITEM ID: CN011843888  
Dairy Product Analysis: Identification of Microorganisms by Mid- Infrared  
Spectroscopy and Determination of Constituents by Raman Spectroscopy

2/6/353 (Item 1 from file: 94)  
01992027 JICST ACCESSION NUMBER: 94A0962214 FILE SEGMENT: PreJICST-E  
Determination of the Orientation of Amino Acid Side-Chains in Flow-Oriented  
Filamentous Biomolecular Assemblies by Polarized Ultraviolet Resonance  
Raman Spectroscopy.

2/6/354 (Item 1 from file: 305)  
170245  
Applications of near-infra-red Fourier-transform Raman spectroscopy in  
biology and medicine.

2/6/355 (Item 1 from file: 345)  
9272560  
Basic Patent (No,Kind,Date): US 4847198 A 890711  
DETECTION AND IDENTIFICATION OF BACTERIA BY MEANS OF ULTRA-VIOLET  
EXCITED RESONANCE RAMAN SPECTRA (English)  
Applic (No,Kind,Date): US 916214 A 871007

2/6/356 (Item 1 from file: 354)  
0357333  
THE DETECTION OF NITRO-POLYNUCLEAR AROMATIC COMPOUNDS BY SURFACE-ENHANCED  
RAMAN SPECTROSCOPY, (WITH EMPHASIS ON THE BACTERIAL MUTAGEN  
1-NITROPYRENE, OFTEN FOUND IN LIGHT-DUTY DIESEL EXHAUST PARTICULATE  
EXTRACTS)  
? s s2 and antibod?  
Processing

Processed 10 of 42 files ...  
Processed 40 of 42 files ...  
Completed processing all files

356 S2  
2354738 ANTIBOD?  
S3 53 S2 AND ANTIBOD?  
? t s3/6/1-53

3/6/1 (Item 1 from file: 434)  
15007138 Genuine Article#: VC341 Number of References: 39  
Title: ORIENTATION OF TRYPTOPHAN-26 IN COAT PROTEIN SUBUNITS OF THE  
FILAMENTOUS VIRUS FF BY POLARIZED RAMAN MICROSCOPY (Abstract  
Available)

3/6/2 (Item 2 from file: 434)  
14827704 Genuine Article#: UP667 Number of References: 35  
Title: SUBUNIT ORIENTATION IN THE FILAMENTOUS VIRUS FF(FD, F1, M13) (  
Abstract Available)

3/6/3 (Item 3 from file: 434)  
13130563 Genuine Article#: NR179 Number of References: 72  
Title: ACCURACY OF PROTEIN FLEXIBILITY PREDICTIONS (Abstract Available)

3/6/4 (Item 4 from file: 434)  
12653103 Genuine Article#: MC828 Number of References: 58  
Title: MEASUREMENT OF CEREBROSPINAL-FLUID ANTIBODY TO THE HIV-1 PRINCIPAL  
NEUTRALIZING DETERMINANT (V3 LOOP) (Abstract Available)

3/6/5 (Item 5 from file: 434)  
12242320 Genuine Article#: KW704 Number of References: 80  
Title: HUMAN HEPATIC CYP1A1 AND CYP1A2 CONTENT, DETERMINED WITH SPECIFIC  
ANTIPEPTIDE ANTIBODIES, CORRELATES WITH THE MUTAGENIC ACTIVATION OF  
PHIP (Abstract Available)

3/6/6 (Item 6 from file: 434)  
11726111 Genuine Article#: JG232 Number of References: 35  
Title: COVALENT LINKAGE OF RUTHENIUM POLYPYRIDYL COMPOUNDS TO  
POLY(L-LYSINE), ALBUMINS, AND IMMUNOGLOBULIN-G (Abstract Available)

~~3/6/7 (Item 7 from file: 434)  
11423547 Genuine Article#: HH366 Number of References: 77  
Title: MODELING OF STRUCTURE AND FUNCTION OF PROTEINS AND NUCLEIC-ACIDS (  
Abstract Available)~~

~~3/6/8 (Item 8 from file: 434)  
11178148 Genuine Article#: GN658 Number of References: 54  
Title: RESONANCE RAMAN-STUDY ON INTACT PEA PHYTOCHROME AND ITS MODEL  
COMPOUNDS - EVIDENCE FOR PROTON MIGRATION DURING THE  
PHOTOTRANSFORMATION (Abstract Available)~~

3/6/9 (Item 9 from file: 434)  
11060853 Genuine Article#: GD635 Number of References: 53

Title: CHARACTERIZATION OF A RECOMBINANT SINGLE-CHAIN MOLECULE COMPRISING  
THE VARIABLE DOMAINS OF A MONOCLONAL-ANTIBODY SPECIFIC FOR HUMAN FIBRIN  
FRAGMENT D-DIMER (Abstract Available)

3/6/10 (Item 10 from file: 434)  
10860517 Genuine Article#: FM712 Number of References: 68  
Title: STRUCTURAL DETERMINANTS OF ALPHA-BUNGAROTOXIN BINDING TO THE  
SEQUENCE SEGMENT 181-200 OF THE MUSCLE NICOTINIC ACETYLCHOLINE-RECEPTOR  
ALPHA-SUBUNIT - EFFECTS OF CYSTEINE CYSTINE MODIFICATION AND  
SPECIES-SPECIFIC AMINO-ACID SUBSTITUTIONS (Abstract Available)

3/6/11 (Item 11 from file: 434)  
08507314 Genuine Article#: L3538 Number of References: 899  
Title: FOLDING AND ASSOCIATION OF PROTEINS

3/6/12 (Item 12 from file: 434)  
07620632 Genuine Article#: E6781 Number of References: 46  
Title: ULTRASTRUCTURAL-LOCALIZATION OF DNA IN 2 CRYPTOMONAS SPECIES BY USE  
OF A MONOCLONAL DNA ANTIBODY

3/6/13 (Item 1 from file: 155)  
07921528 94245619  
Aromatic amine dehydrogenase, a second tryptophan tryptophylquinone  
enzyme.

3/6/14 (Item 2 from file: 155)  
05935517 86177675  
Immunochemistry, physical chemistry and biology of 2',5'-oligoadenylates.

3/6/15 (Item 1 from file: 654)  
02663176  
METHODS FOR THE DETECTION AND ISOLATION OF PROTEINS  
FULL TEXT: 2046 lines

3/6/16 (Item 2 from file: 654)  
02642664  
DERIVATIZATION OF SOLID SUPPORTS AND METHODS FOR OLIGOMER SYNTHESIS  
[Affixing functional sites to the surface of a solid substrate]  
FULL TEXT: 1471 lines

3/6/17 (Item 3 from file: 654)  
02640745  
ANALYTE DETECTION THROUGH OBSERVED OPTICAL MODULATION OF POLYMERIZED LIPID  
LAYERS  
[Contacting analyte with acetylenic polymer anchored to substrate and  
having terminal binding groups; receptor binding assay]  
FULL TEXT: 1671 lines

3/6/18 (Item 4 from file: 654)  
02586344  
DIRECTED EVOLUTION OF NOVEL BINDING PROTEINS



[Genetic package, chimeric]  
FULL TEXT: 17681 lines

3/6/19 (Item 5 from file: 654)  
02557657  
METHODS FOR MAKING A DEVICE FOR CONCURRENTLY PROCESSING MULTIPLE BIOLOGICAL  
CHIP ASSAYS  
[Chip plate with plurality of test wells]  
FULL TEXT: 648 lines

3/6/20 (Item 6 from file: 654)  
02555213  
PROCESS FOR THE MEASUREMENT OF NUCLEIC ACIDS  
[Mixing sample with labelled common polynucleotide and polynucleotide probe  
comprising sequence complementary to part of polynucleotide]  
FULL TEXT: 687 lines

3/6/21 (Item 7 from file: 654)  
02542995  
METHOD AND APPARATUS FOR SUSPENDING MICROPARTICLES  
[ Quadrupole electric field mass analyzer, detecting microorganisms used in  
biological warfare in aerosol]  
FULL TEXT: 352 lines

3/6/22 (Item 8 from file: 654)  
02528641  
REVERSE ANTIMICROBIAL PEPTIDES  
[Bactericides or fungicides]  
FULL TEXT: 4633 lines

3/6/23 (Item 9 from file: 654)  
02486022  
METHOD OF PURIFYING WATER CONTROLLED BY LASER SCANNING  
[Photodetecting, radiating, computer processing, neutralizing]  
FULL TEXT: 294 lines

3/6/24 (Item 10 from file: 654)  
02481608  
LIQUID LAUNDRY DETERGENTS WITH CITRIC ACID, CELLULASE, AND BORICDIOL  
COMPLEX TO INHIBIT PROTEOLYTIC ENZYME  
~~[Boric acid and 1,2-propanediol added for storage stability of cellulase]~~  
FULL TEXT: 789 lines

---

3/6/25 (Item 11 from file: 654)  
02474841  
ANALYTICAL SYSTEM USEFUL IN DIAGNOSIS OF THE CONDITION OF A DISEASE  
FULL TEXT: 566 lines

3/6/26 (Item 12 from file: 654)  
02470423  
SURFACTANT-ENHANCED LIGHT EMISSION- OR ABSORBANCE-BASED BINDING ASSAYS FOR  
POLYNUCLEIC ACIDS

---

[ Cationic surfactants and labels of fluorescent compounds containing pyrene, naphthalene or anthracene with phosphate groups]  
FULL TEXT: 651 lines

3/6/27 (Item 13 from file: 654)  
02396402  
SURFACE-ENHANCED RAMAN SCATTERING (SERS) DOSIMETER AND PROBE  
FULL TEXT: 452 lines

3/6/28 (Item 14 from file: 654)  
02389265  
METHOD FOR PARTICULATE REAGENT SAMPLE TREATMENT  
[ Mixing sample with particulate reagent to form stable flowable suspension prior to introducing sample into analytical device; eliminates memory effects]  
FULL TEXT: 897 lines

3/6/29 (Item 15 from file: 654)  
02374688  
METHOD FOR THE DIAGNOSIS OF VIRULENT BACTERIA  
FULL TEXT: 852 lines

3/6/30 (Item 16 from file: 654)  
02247948  
LIGAND BINDING ASSAY FOR AN ANALYTE USING SURFACE-ENHANCED SCATTERING (SERS) SIGNAL  
[ Binding sample to label material which is active for light scattering, then measurement of signal intensity, spectrum analysis]  
FULL TEXT: 874 lines

3/6/31 (Item 17 from file: 654)  
02197641  
DIRECTED EVOLUTION OF NOVEL BINDING PROTEINS  
FULL TEXT: 18179 lines

3/6/32 (Item 18 from file: 654)  
02182710  
METHOD OF MEASUREMENT IN BIOLOGICAL SYSTEMS  
[ Radioactive detection as labels, administering to host and isolation, measuring the isotopes]  
FULL TEXT: 1460 lines

---

3/6/33 (Item 19 from file: 654)  
02161735  
OPTICAL METHOD FOR MEASURING AN ANALYTE USING AREA-MODULATED LUMINESCENCE  
FULL TEXT: 616 lines

~~3/6/34 (Item 20 from file: 654)~~  
~~02080308~~  
~~RESERVOIR CHEMICAL SENSORS~~  
~~[ Universal sensor for a variety of measurement techniques, detection of water pollutants, medical diagnosis]~~

---

FULL TEXT: 1492 lines

3/6/35 (Item 21 from file: 654)  
02015085

FLUORESCENT CONJUGATES FOR ANALYSIS OF MOLECULES AND CELLS

FULL TEXT: 676 lines

3/6/36 (Item 22 from file: 654)  
01982713

AREA-MODULATED LUMINESCENCE (AML)

FULL TEXT: 563 lines

3/6/37 (Item 1 from file: 98)

03051081 H.W. WILSON RECORD NUMBER: BGSI95051081 (USE FORMAT 7 FOR  
FULLTEXT)

Peptides as weapons against microorganisms in the chemical defense system  
of vertebrates.

WORD COUNT: 11053

3/6/38 (Item 1 from file: 348)  
00513064

**ORDER fax of complete patent from KR SourceOne. See HELP ORDER348**

Antimicrobial peptides and their use against plant pathogens.

Antimikrobielle Peptide und ihre Verwendung gegen Pflanzenpathogene.

Peptides antimicrobiens et leur utilization contre les pathogenes des  
plantes.

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	2104
SPEC A	(English)	EPABF1	41191
Total word count - document A			43295
Total word count - document B			0
Total word count - documents A + B			43295

3/6/39 (Item 2 from file: 348)  
00405208

**ORDER fax of complete patent from KR SourceOne. See HELP ORDER348**

A new method for the diagnosis of virulent bacteria.

Methode fur die Diagnose von virulenten Bakterien.

Methode de diagnostic de bacterie virulente.

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	1028
SPEC A	(English)	EPABF1	5303
Total word count - document A			6331
Total word count - document B			0
Total word count - documents A + B			6331

3/6/40 (Item 3 from file: 348)  
00313746

**ORDER fax of complete patent from KR SourceOne. See HELP ORDER348**

Synthetic polypeptides.

Synthetische Polypeptide.

Polypeptides synthétiques.

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	891
SPEC A	(English)	EPABF1	3486
Total word count - document A			4377
Total word count - document B			0
Total word count - documents A + B			4377

3/6/41 (Item 4 from file: 348)

00244456

**ORDER fax of complete patent from KR SourceOne. See HELP ORDER348**

Competitive homogeneous Assay.

Kompetitiver homogener Test.

Dosage homogene concomitant.

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPBBF1	973
CLAIMS B	(German)	EPBBF1	974
CLAIMS B	(French)	EPBBF1	1095
SPEC B	(English)	EPBBF1	11751
Total word count - document A			0
Total word count - document B			14793
Total word count - documents A + B			14793

3/6/42 (Item 1 from file: 653)

01800311

FLUORESCENT CONJUGATES FOR ANALYSIS OF MOLECULES AND CELLS

FULL TEXT: 687 lines

3/6/43 (Item 2 from file: 653)

01457753

PHYCOBILIPROTEIN FLUORESCENT CONJUGATES

FULL TEXT: 326 lines

3/6/44 (Item 3 from file: 653)

01433986

~~FLUORESCENT~~ ~~IMMUNOASSAY~~ EMPLOYING A PHYCOBILIPROTEIN LABELED LIGAND OR RECEPTOR

[DETECTION OF A MEMBER]

FULL TEXT: 690 lines

3/6/45 (Item 1 from file: 148)

08970319 SUPPLIER NUMBER: 18691407 (USE FORMAT 7 OR 9 FOR FULL TEXT)

Biotechnology.(R&D Universe of Innovations)

WORD COUNT: 1203 LINE COUNT: 00103

3/6/46 (Item 2 from file: 148)

08918794 SUPPLIER NUMBER: 18535112 (USE FORMAT 7 OR 9 FOR FULL TEXT)

Bioengineering medicine's future. (diagnostic and therapeutic innovations)(includes related article on industrial research and

development)  
WORD COUNT: 1763 LINE COUNT: 00150

3/6/47 (Item 3 from file: 148)  
07974437 SUPPLIER NUMBER: 14942318 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
Dose response in the treatment of breast cancer. (Viewpoint)  
WORD COUNT: 2743 LINE COUNT: 00247

3/6/48 (Item 4 from file: 148)  
06813504 SUPPLIER NUMBER: 14522762 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
1993 R&D 100 awards: technology's brightest stars: these winners sparkle!  
(Research and Development magazine)  
WORD COUNT: 12635 LINE COUNT: 01133

3/6/49 (Item 1 from file: 636)  
02783788  
SUBJECT: CENTER FOR CELLULAR AND MOLECULAR BIOLOGY, HYDERABAD  
WORD COUNT: 1603

3/6/50 (Item 1 from file: 388)  
00001974

Defense Research Sciences

Binder: PROGRAM ELEMENT DESCRIPTIVE SUMMARY - FY1993  
Service: ARMY  
Pub. Date: August 18, 1992  
Word Count: 12119  
Pgm.Element: 0601102A

\* FOR FULL TEXT, USE FORMAT 7 OR 9 \*

3/6/51 (Item 2 from file: 388)  
00000001

DEFENSE RESEARCH SCIENCES

Binder: PROGRAM ELEMENT DESCRIPTIVE SUMMARY - FY1989  
Service: Army  
Pub. Date: September 22, 1988  
Word Count: 5689  
Pgm.Element: 0601102A

\* FOR FULL TEXT, USE FORMAT 7 OR 9 \*

3/6/52 (Item 1 from file: 442)  
00085106

Pathological Case of the Month (ARTICLE)

LINE COUNT: 00104

3/6/53 (Item 1 from file: 669)  
00577767  
Export Administration Regulation; Simplification of Export Administration  
Regulations

WORD COUNT: 452,584  
? s s2 and (uv or ultraviolet or ultra(w)violet)  
Processed 10 of 42 files ...  
Processing  
Completed processing all files  
356 S2  
616338 UV  
649293 ULTRAVIOLET  
290954 ULTRA  
86837 VIOLET  
33657 ULTRA(W)VIOLET  
S4 82 S2 AND (UV OR ULTRAVIOLET OR ULTRA(W)VIOLET)  
? t s4/6/1-84

4/6/1 (Item 1 from file: 434)  
15799897 Genuine Article#: XG901 Number of References: 60  
Title: Structure and interactions of the single-stranded DNA genome of  
filamentous virus fd: Investigation by ultraviolet resonance Raman  
spectroscopy (ABSTRACT AVAILABLE)

4/6/2 (Item 2 from file: 434)  
14026245 Genuine Article#: RJ065 Number of References: 25  
Title: SEQUENTIAL TREATMENT OF MECHANICAL AND CHEMIMECHANICAL PULPS WITH  
LIGHT AND HEAT - A RAMAN-SPECTROSCOPIC STUDY (Abstract Available)

4/6/3 (Item 3 from file: 434)  
13481170 Genuine Article#: PQ930 Number of References: 35  
Title: INFLUENCE OF MONOVALENT CATIONS ON THE ULTRAVIOLET-VISIBLE SPECTRUM  
OF TRYPTOPHAN TRYPTOPHYLQUINONE-CONTAINING METHYLAMINE DEHYDROGENASE  
FROM BACTERIUM W3A1 (Abstract Available)

4/6/4 (Item 4 from file: 434)  
13157813 Genuine Article#: NF373 Number of References: 703  
Title: ULTRASHORT-PULSE GENERATION AND AMPLIFICATION - APPLICATIONS IN  
ANALYTICAL-CHEMISTRY

4/6/5 (Item 5 from file: 434)  
12868743 Genuine Article#: MY842 Number of References: 69  
Title: ~~ULTRAVIOLET ABSORBENCY AND CIRCULAR-DICHROISM OF PFI VIRUS -~~  
NUCLEOTIDE/SUBUNIT RATIO OF UNITY, HYPERCHROMIC TYROSINES AND DNA  
BASES, AND HIGH HELICITY IN THE SUBUNITS (Abstract Available)

4/6/6 (Item 6 from file: 434)  
12698808 Genuine Article#: MG624 Number of References: 61  
Title: ULTRAVIOLET MICRO-RAMAN SPECTROGRAPH FOR THE DETECTION OF SMALL  
NUMBERS OF BACTERIAL-CELLS (Abstract Available)

4/6/7 (Item 7 from file: 434)  
12396501 Genuine Article#: LH977 Number of References: 59

Title: PHOTOREDUCTION OF HEME-PROTEINS - SPECTROSCOPIC STUDIES AND  
CROSS-SECTION MEASUREMENTS (Abstract Available)

4/6/8 (Item 8 from file: 434)  
08190191 Genuine Article#: J0226 Number of References: 65  
Title: DETERMINATION OF THE SECONDARY STRUCTURE OF PROTEINS FROM THE RAMAN  
AMIDE-I BAND - THE REFERENCE INTENSITY PROFILES METHOD

4/6/9 (Item 9 from file: 434)  
07858413 Genuine Article#: F7464 Number of References: 25  
Title: THE ORGANIC COFACTOR IN PLASMA AMINE OXIDASE - EVIDENCE FOR  
PYRROLOQUINOLINE QUINONE AND AGAINST PYRIDOXAL-PHOSPHATE

4/6/10 (Item 10 from file: 434)  
07649007 Genuine Article#: E9067 Number of References: 49  
Title: EVIDENCE FOR METHOXATIN (PYRROLOQUINOLINEQUINONE) AS THE COFACTOR IN  
BOVINE PLASMA AMINE OXIDASE FROM RESONANCE RAMAN-SPECTROSCOPY

4/6/11 (Item 1 from file: 5)  
9113768 BIOSIS Number: 93098768  
RESEARCH ON CHROMATIC ALTERATIONS OF MARBLE FROM THE CERTOSA OF PAVIA  
NOTE II

4/6/12 (Item 2 from file: 5)  
7632348 BIOSIS Number: 90000348  
UV RESONANCE RAMAN SPECTRA OF BACTERIA BACTERIAL SPORES PROTOPLASTS AND  
CALCIUM DIPICOLINATE

4/6/13 (Item 3 from file: 5)  
6874241 BIOSIS Number: 37068620  
DETECTION AND IDENTIFICATION OF BACTERIA BY MEANS OF UV EXCITED RESONANCE  
RAMAN SPECTRA US PATENT-4847198. JULY 11 1989

4/6/14 (Item 1 from file: 654)  
02663176  
METHODS FOR THE DETECTION AND ISOLATION OF PROTEINS  
FULL TEXT: 2046 lines

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4/6/15 (Item 2 from file: 654)  
02642664  
DERIVATIZATION OF SOLID SUPPORTS AND METHODS FOR OLIGOMER SYNTHESIS  
[Affixing functional sites to the surface of a solid substrate]  
FULL TEXT: 1471 lines

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4/6/16 (Item 3 from file: 654)  
02640745  
~~ANALYTE DETECTION THROUGH OBSERVED OPTICAL MODULATION OF POLYMERIZED LIPID~~  
LAYERS  
[Contacting analyte with acetylenic polymer anchored to substrate and  
having terminal binding groups; receptor binding assay]  
FULL TEXT: 1671 lines

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4/6/17 (Item 4 from file: 654)  
02588769  
ANTIBIOTIC SUSCEPTIBILITY TEST  
[ Culture of cells and detection of Raman spectra and displaying ribosome  
peaks]  
FULL TEXT: 286 lines

4/6/18 (Item 5 from file: 654)  
02586344  
DIRECTED EVOLUTION OF NOVEL BINDING PROTEINS  
[Genetic package, chimeric]  
FULL TEXT: 17681 lines

4/6/19 (Item 6 from file: 654)  
02557657  
METHODS FOR MAKING A DEVICE FOR CONCURRENTLY PROCESSING MULTIPLE BIOLOGICAL  
CHIP ASSAYS  
[Chip plate with plurality of test wells]  
FULL TEXT: 648 lines

4/6/20 (Item 7 from file: 654)  
02542995  
METHOD AND APPARATUS FOR SUSPENDING MICROPARTICLES  
[ Quadrupole electric field mass analyzer, detecting microorganisms used in  
biological warfare in aerosol]  
FULL TEXT: 352 lines

4/6/21 (Item 8 from file: 654)  
02538061  
ELECTROCHEMICAL DENATURATION OF DOUBLE-STRANDED NUCLEIC ACID  
[ Applying voltage to solution with electrode and converting portion to  
single-stranded form]  
FULL TEXT: 1058 lines

4/6/22 (Item 9 from file: 654)  
02528641  
REVERSE ANTIMICROBIAL PEPTIDES  
[Bactericides or fungicides]  
FULL TEXT: 4633 lines

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4/6/23 (Item 10 from file: 654)  
02510323  
CHARACTERIZATION OF PARTICLES BY MODULATED DYNAMIC LIGHT SCATTERING  
FULL TEXT: 1419 lines

4/6/24 (Item 11 from file: 654)  
02486022  
METHOD OF PURIFYING WATER CONTROLLED BY LASER SCANNING  
[Photodetecting, radiating, computer processing, neutralizing]  
FULL TEXT: 294 lines

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4/6/25 (Item 12 from file: 654)  
02470423  
SURFACTANT-ENHANCED LIGHT EMISSION- OR ABSORBANCE-BASED BINDING ASSAYS FOR  
POLYNUCLEIC ACIDS  
[ Cationic surfactants and labels of fluorescent compounds containing  
pyrene, naphthalene or anthracene with phosphate groups]  
FULL TEXT: 651 lines

4/6/26 (Item 13 from file: 654)  
02434742  
CHARACTERIZATION OF PARTICLES BY MODULATED DYNAMIC LIGHT SCATTERING  
FULL TEXT: 1203 lines

4/6/27 (Item 14 from file: 654)  
02423360  
ANTIMICROBIAL PEPTIDES ACTIVE AGAINST PLANT PATHOGENS  
[Magainins]  
FULL TEXT: 3312 lines

4/6/28 (Item 15 from file: 654)  
02278715  
METHOD FOR DISTINGUISHING BETWEEN CALCIFIED ATHEROSCLEROTIC TISSUE AND  
FIBROUS ATHEROSCLEROTIC TISSUE OR NORMAL CARDIOVASCULAR TISSUE USING RAMAN  
SPECTROSCOPY  
FULL TEXT: 749 lines

4/6/29 (Item 16 from file: 654)  
02247948  
LIGAND BINDING ASSAY FOR AN ANALYTE USING SURFACE-ENHANCED SCATTERING  
(SERS) SIGNAL  
[ Binding sample to label material which is active for light scattering,  
then measurement of signal intensity, spectrum analysis]  
FULL TEXT: 874 lines

4/6/30 (Item 17 from file: 654)  
02197641  
DIRECTED EVOLUTION OF NOVEL BINDING PROTEINS  
FULL TEXT: 18179 lines

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4/6/31 (Item 18 from file: 654)  
02124584  
MIXED LIGAND COMPLEXES AND USES THEREOF AS BINDING AGENTS AND PROBES TO DNA  
[Spectroscopically or photoactively determinable]  
FULL TEXT: 2996 lines

4/6/32 (Item 19 from file: 654)  
02080308  
RESERVOIR CHEMICAL SENSORS  
[ Universal sensor for a variety of measurement techniques, detection of  
water pollutants, medical diagnosis]  
FULL TEXT: 1492 lines

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4/6/33 (Item 20 from file: 654)  
02071588  
METHOD CONTROLLING A PROCESS BY IMPEDANCE ANALYSIS  
FULL TEXT: 481 lines

4/6/34 (Item 21 from file: 654)  
02028504  
METHODS OF DISCRIMINATING BETWEEN CONTAMINATED AND UNCONTAMINATED  
CONTAINERS  
FULL TEXT: 1164 lines

4/6/35 (Item 22 from file: 654)  
02015085  
FLUORESCENT CONJUGATES FOR ANALYSIS OF MOLECULES AND CELLS  
FULL TEXT: 676 lines

4/6/36 (Item 23 from file: 654)  
01949832  
FLUORESCENT STOKES SHIFT PROBES FOR POLYNUCLEOTIDE HYBRIDIZATION  
[ Predetermined nucleotide base unit spacings between donor and acceptor  
fluorophores to provide increased sensitivity]  
FULL TEXT: 769 lines

4/6/37 (Item 24 from file: 654)  
01898990  
MODIFICATION OF CELLULOSE NORMALLY SYNTHESIZED BY CELLULOSE-PRODUCING  
MICROORGANISMS  
[ PLATING OUT CELLULOSE II-PRODUCING ACETOBACTER, INCUBATING, INOCULATING,  
SELECTING]  
FULL TEXT: 1162 lines

4/6/38 (Item 1 from file: 73)  
10395082 EMBASE No: 97204496  
Structure and interactions of the single-stranded DNA genome of  
filamentous virus fd: Investigation by ultraviolet resonance Raman  
spectroscopy

4/6/39 (Item 1 from file: 76)  
01254225 2001683  
Detection and identification of bacteria by means of ultra-violet excited  
resonance Raman spectroscopy.

---

4/6/40 (Item 2 from file: 76)  
01017769 1485842  
Bacteriorhodopsin: Fourier transform infrared methods for studies of  
protonation of carboxyl groups.  
BIOMEMBRANES. PART O. PROTONS AND WATER: STRUCTURE AND TRANSLOCATION.

---

4/6/41 (Item 1 from file: 265)  
00310435  
IDENTIFYING NO.: 5R01GM51962-03 AGENCY CODE: CRISP

---

FUNCTIONS AND PROPERTIES OF (2FE-2S) CENTERS

4/6/42 (Item 2 from file: 265)  
00309165

IDENTIFYING NO.: 5R01GM45597-07 AGENCY CODE: CRISP  
SITE-SPECIFIC PROPERTIES OF A UNIQUE IRON-SULFUR PROTEIN

4/6/43 (Item 3 from file: 265)  
00286529

IDENTIFYING NO.: 1R15AI41217-01 AGENCY CODE: CRISP  
HEME BINDING MECHANISM OF HBPA OF HAEMOPHILUS INFLUENZAE

4/6/44 (Item 1 from file: 144)  
10592355 PASCAL No.: 93-0101607  
UV resonance Raman studies of bacteria

4/6/45 (Item 1 from file: 6)  
1608966 NTIS Accession Number: AD-A249 811/1/XAB  
Rapid Detection of Single Bacterial Cells by Deep UV Micro Raman  
Spectroscopy  
(Final rept. 1 Oct 88-31 Dec 91)  
NTIS Prices: PC A03/MF A01

4/6/46 (Item 2 from file: 6)  
1334891 NTIS Accession Number: AD-A194 719/1/XAB  
Rapid Detection of Bacteria and Other Microorganisms: A Basic Study in  
the Application of Resonance Raman and Time-Resolved Fluorescence  
Spectroscopies  
(Rept. for 15 Oct 84-14 Feb 88)  
NTIS Prices: PC A03/MF A01

4/6/47 (Item 3 from file: 6)  
520759 NTIS Accession Number: AD-917 105/9  
Preliminary Evaluation of LIDAR Techniques for Advance Warning of  
Biological Threats  
(Technical rept.)  
Distribution limitation now removed.  
NTIS Prices: PC A04/MF A01

4/6/48 (Item 1 from file: 2)  
~~04099425~~ INSPEC Abstract Number: A9207-8715M-035, C9204-7320-028  
Title: Computerized technique for the analysis of weak signals in UV Raman  
scattering from biological molecules

4/6/49 (Item 1 from file: 35)  
01367121 ORDER NO: AAD94-21895  
APPLICATIONS OF UV RESONANCE RAMAN AND MICRO-RAMAN SPECTROSCOPY FOR THE  
RAPID CHARACTERIZATION OF BACTERIA AND THE STUDY OF POLYMERS (RESONANCE  
RAMAN SPECTROSCOPY)

4/6/50 (Item 2 from file: 35)

01230782 ORDER NO: NOT AVAILABLE FROM UNIVERSITY MICROFILMS INT'L.  
INVESTIGATIONS OF BIOLOGICAL STRUCTURES USING DIFFRACTION AND SCATTERING  
METHODS

4/6/51 (Item 3 from file: 35)  
01159860 ORDER NO: AAD91-09467  
ULTRAVIOLET RESONANCE RAMAN SPECTROSCOPIC STUDIES OF BACTERIA AND BACTERIAL  
SPORES

4/6/52 (Item 1 from file: 98)  
03281233 H.W. WILSON RECORD NUMBER: BGS196031233 (USE FORMAT 7 FOR  
FULLTEXT)  
Remote sensing of algal bloom dynamics.  
WORD COUNT: 6960

4/6/53 (Item 1 from file: 8)  
02727276  
Title: Ultra-violet resonance Raman spectra of live cyanobacteria with  
222.5-251.0 nm pulsed laser excitation.

4/6/54 (Item 1 from file: 348)  
00812910  
**ORDER fax of complete patent from KR SourceOne. See HELP ORDER348**  
S-phenyl-L-cysteine production process  
Verfahren zur Herstellung von S-Phenyl-L-Cystein  
Procede de production de la S-phenyl-L-cysteine  
LANGUAGE (Publication,Procedural,Application): English; English; English  
FULLTEXT AVAILABILITY:  

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPAB97	407
SPEC A	(English)	EPAB97	4768
Total word count - document A			5175
Total word count - document B			0
Total word count - documents A + B			5175

4/6/55 (Item 2 from file: 348)  
00513064  
**ORDER fax of complete patent from KR SourceOne. See HELP ORDER348**  
Antimicrobial peptides and their use against plant pathogens.  
Antimikrobielle Peptide und ihre Verwendung gegen Pflanzenpathogene.  
Peptides antimicrobiens et leur utilization contre les pathogenes des  
plantes.  
LANGUAGE (Publication,Procedural,Application): English; English; English  
FULLTEXT AVAILABILITY:  

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	2104
SPEC A	(English)	EPABF1	41191
Total word count - document A			43295
Total word count - document B			0
Total word count - documents A + B			43295

4/6/56 (Item 3 from file: 348)  
00467470  
**ORDER fax of complete patent from KR SourceOne. See HELP ORDER348**

Antimicrobial peptides active against plant pathogens, their use and screening methods pertaining thereto.

Antimikrobielle Peptide wirksam gegen Pflanzenpathogene, ihre Verwendung und auf sie bezogene Nachweismethoden.

Peptides antimicrobiens actifs contre les pathogenes des plantes, leur utilisation et methodes d'examen collectif appartenant a ces-ci.

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	7428
SPEC A	(English)	EPABF1	30305
Total word count - document A			37733
Total word count - document B			0
Total word count - documents A + B			37733

4/6/57 (Item 4 from file: 348)

00377422

**ORDER fax of complete patent from KR SourceOne. See HELP ORDER348**

Characterization of particles by modulated dynamic light scattering.

Kennzeichnung von Teilchen durch modulierte dynamische Lichtstreuung.

Caracterisation de particules par diffusion dynamique modulee de lumiere.

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	1853
CLAIMS B	(English)	EPAB95	1244
CLAIMS B	(German)	EPAB95	1100
CLAIMS B	(French)	EPAB95	1397
SPEC A	(English)	EPABF1	8277
SPEC B	(English)	EPAB95	8180
Total word count - document A			10131
Total word count - document B			11921
Total word count - documents A + B			22052

4/6/58 (Item 5 from file: 348)

00281819

**ORDER fax of complete patent from KR SourceOne. See HELP ORDER348**

METHODS OF DISCRIMINATING BETWEEN CONTAMINATED AND UNCONTAMINATED CONTAINERS.

VERFAHREN ZUR UNTERSCHIEDUNG ZWISCHEN VERSCHMUTZTEN UND NICHT-VERSCHMUTZTEN BEHALTERN.

PROCEDES POUR DIFFERENCIER DES RECIPIENTS CONTAMINES DE RECIPIENTS NON CONTAMINES.

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPBBF1	991
CLAIMS B	(German)	EPBBF1	921
CLAIMS B	(French)	EPBBF1	1132
SPEC B	(English)	EPBBF1	5548
Total word count - document A			0
Total word count - document B			8592
Total word count - documents A + B			8592

4/6/59 (Item 6 from file: 348)

00244456

**ORDER fax of complete patent from KR SourceOne. See HELP ORDER348**

Competitive homogeneous Assay.

Kompetitiver homogener Test.

Dosage homogene concomitant.

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPBBF1	973
CLAIMS B	(German)	EPBBF1	974
CLAIMS B	(French)	EPBBF1	1095
SPEC B	(English)	EPBBF1	11751
Total word count - document A			0
Total word count - document B			14793
Total word count - documents A + B			14793

4/6/60 (Item 7 from file: 348)

00211681

**ORDER fax of complete patent from KR SourceOne. See HELP ORDER348**

Fluorescent stokes shift probes for polynucleotide hybridization assays.

Fluoreszierende stokesche Shift-Sonden für Polynucleotidhybridisationsproben.

Sondes fluorescentes du type déplacement de stokes pour les essais d'hybridisation des polynucleotides.

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPBBF1	534
CLAIMS B	(German)	EPBBF1	459
CLAIMS B	(French)	EPBBF1	578
SPEC B	(English)	EPBBF1	5607
Total word count - document A			0
Total word count - document B			7178
Total word count - documents A + B			7178

4/6/61 (Item 1 from file: 653)

01800311

FLUORESCENT CONJUGATES FOR ANALYSIS OF MOLECULES AND CELLS

FULL TEXT: 687 lines

4/6/62 (Item 2 from file: 653)

01786978

DETECTION AND IDENTIFICATION OF BACTERIA BY MEANS OF ULTRA-VIOLET EXCITED RESONANCE RAMAN SPECTRA

[SPECTRUM ANALYSIS]

FULL TEXT: 305 lines

4/6/63 (Item 3 from file: 653)

01768763

METHODS OF DISCRIMINATING BETWEEN CONTAMINATED AND UNCONTAMINATED CONTAINERS

[PLASTIC BEVERAGE BOTTLES]

FULL TEXT: 658 lines

4/6/64 (Item 4 from file: 653)

01457753

PHYCOBILIPROTEIN FLUORESCENT CONJUGATES

FULL TEXT: 326 lines

4/6/65 (Item 5 from file: 653)  
01433986  
FLUORESCENT IMMUNOASSAY EMPLOYING A PHYCOBILIPROTEIN LABELED LIGAND OR  
RECEPTOR  
[DETECTION OF A MEMBER]  
FULL TEXT: 690 lines

4/6/66 (Item 1 from file: 53)  
00277622 FOODLINE ACCESSION NUMBER: 290616  
Modern techniques for rapid microbiological analysis.

4/6/67 (Item 2 from file: 53)  
00277600 FOODLINE ACCESSION NUMBER: 290593  
UV Resonance Raman spectroscopic detection and identification of bacteria  
and other microorganisms.

4/6/68 (Item 1 from file: 148)  
06813504 SUPPLIER NUMBER: 14522762 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
1993 R&D 100 awards: technology's brightest stars: these winners sparkle!  
(Research and Development magazine)  
WORD COUNT: 12635 LINE COUNT: 01133

4/6/69 (Item 2 from file: 148)  
05925941 SUPPLIER NUMBER: 13330630 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
Recent advances in environmental sensing.  
WORD COUNT: 2341 LINE COUNT: 00194

4/6/70 (Item 1 from file: 62)  
00325452  
An ultraviolet (242 nm excitation) resonance Raman study of live  
bacteria and bacterial components

4/6/71 (Item 1 from file: 351)  
009915814  
WPI Acc No: 94-183524/199422  
Determining effectiveness of antibiotics against bacteria - e.g. using  
~~ultraviolet resonance Raman spectroscopy~~

---

4/6/72 (Item 2 from file: 351)  
007990618 **Image available**  
WPI Acc No: 89-255730/198935  
Detection and identification of bacteria - by using emitted light energy,  
resonance enhanced Raman scattering to produce characteristic spectra

~~4/6/73 (Item 1 from file: 158)~~  
~~00255963~~ ~~DIODES RECORD NUMBER: 100854~~  
~~GUIDELINE FOR SUBMITTING SUPPORTING DOCUMENTATION IN DRUG APPLICATIONS~~  
~~FOR THE MANUFACTURE OF DRUG SUBSTANCES (2/87) PP: 63.~~  
~~WORD COUNT: 10843~~

---

4/6/74 (Item 2 from file: 158)  
00089402 DIOGENES RECORD NUMBER: 5100854  
GUIDELINES SUBMITTING SUPPORTING DOCUMENTATION IN DRUG APPLICATIONS FOR  
MANUFACTURE OF DRUG SUBSTANCES PP: 64.  
WORD COUNT: 10879

4/6/75 (Item 3 from file: 158)  
00015843 DIOGENES RECORD NUMBER: 00044543  
DRAFT GL FOR THE MFG OF DRUG SUBSTANCES 4/85 (#5) PP: 28  
WORD COUNT: 7319

4/6/76 (Item 1 from file: 16)  
03950253  
RECENT ADVANCES IN ENVIRONMENTAL SENSING  
\*FULL TEXT AVAILABLE IN FORMAT 7 OR 9\* WORD COUNT: 2150

4/6/77 (Item 1 from file: 340)  
1961103 8915829  
C/ DETECTION AND IDENTIFICATION OF BACTERIA BY MEANS OF ULTRA-VIOLET  
EXCITED RESONANCE RAMAN SPECTRA; SPECTRUM ANALYSIS

4/6/78 (Item 1 from file: 388)  
00000001

DEFENSE RESEARCH SCIENCES

Binder: PROGRAM ELEMENT DESCRIPTIVE SUMMARY - FY1989  
Service: Army  
Pub. Date: September 22, 1988  
Word Count: 5689  
Pgm.Element: 0601102A

\* FOR FULL TEXT, USE FORMAT 7 OR 9 \*

4/6/79 (Item 1 from file: 669)  
00577767  
Export Administration Regulation; Simplification of Export Administration  
Regulations

WORD COUNT: 452,584

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4/6/80 (Item 2 from file: 669)  
00413543  
Revision of Commodity Control List  
WORD COUNT: 106,723

4/6/81 (Item 1 from file: 94)  
01992027 JICST ACCESSION NUMBER: 94A0962214 FILE SEGMENT: PreJICST-E  
Determination of the Orientation of Amino Acid Side-Chains in Flow-Oriented  
Filamentous Biomolecular Assemblies by Polarized Ultraviolet Resonance

---



Raman Spectroscopy.

4/6/82 (Item 1 from file: 345)  
9272560  
Basic Patent (No,Kind,Date): US 4847198 A 890711  
DETECTION AND IDENTIFICATION OF BACTERIA BY MEANS OF ULTRA-VIOLET  
EXCITED RESONANCE RAMAN SPECTRA (English)  
Applic (No,Kind,Date): US 916214 A 871007  
? s s3 and s4  
53 S3  
82 S4  
S5 21 S3 AND S4  
? t s5/6/1-21

5/6/1 (Item 1 from file: 654)  
02663176  
METHODS FOR THE DETECTION AND ISOLATION OF PROTEINS  
FULL TEXT: 2046 lines

5/6/2 (Item 2 from file: 654)  
02642664  
DERIVATIZATION OF SOLID SUPPORTS AND METHODS FOR OLIGOMER SYNTHESIS  
[Affixing functional sites to the surface of a solid substrate]  
FULL TEXT: 1471 lines

5/6/3 (Item 3 from file: 654)  
02640745  
ANALYTE DETECTION THROUGH OBSERVED OPTICAL MODULATION OF POLYMERIZED LIPID  
LAYERS  
[Contacting analyte with acetylenic polymer anchored to substrate and  
having terminal binding groups; receptor binding assay]  
FULL TEXT: 1671 lines

5/6/4 (Item 4 from file: 654)  
02586344  
DIRECTED EVOLUTION OF NOVEL BINDING PROTEINS  
[Genetic package, chimeric]  
FULL TEXT: 17681 lines

5/6/5 (Item 5 from file: 654)  
02557657  
METHODS FOR MAKING A DEVICE FOR CONCURRENTLY PROCESSING MULTIPLE BIOLOGICAL  
CHIP ASSAYS  
[Chip plate with plurality of test wells]  
FULL TEXT: 648 lines

5/6/6 (Item 6 from file: 654)  
02542995  
METHOD AND APPARATUS FOR SUSPENDING MICROPARTICLES  
[Quadrupole electric field mass analyzer, detecting microorganisms used in  
biological warfare in aerosol]  
FULL TEXT: 352 lines

5/6/7 (Item 7 from file: 654)

02528641

REVERSE ANTIMICROBIAL PEPTIDES

[Bactericides or fungicides]

FULL TEXT: 4633 lines

5/6/8 (Item 8 from file: 654)

02486022

METHOD OF PURIFYING WATER CONTROLLED BY LASER SCANNING

[Photodetecting, radiating, computer processing, neutralizing]

FULL TEXT: 294 lines

5/6/9 (Item 9 from file: 654)

02470423

SURFACTANT-ENHANCED LIGHT EMISSION- OR ABSORBANCE-BASED BINDING ASSAYS FOR POLYNUCLEIC ACIDS

[ Cationic surfactants and labels of fluorescent compounds containing pyrene, naphthalene or anthracene with phosphate groups]

FULL TEXT: 651 lines

5/6/10 (Item 10 from file: 654)

02247948

LIGAND BINDING ASSAY FOR AN ANALYTE USING SURFACE-ENHANCED SCATTERING (SERS) SIGNAL

[ Binding sample to label material which is active for light scattering, then measurement of signal intensity, spectrum analysis]

FULL TEXT: 874 lines

5/6/11 (Item 11 from file: 654)

02197641

DIRECTED EVOLUTION OF NOVEL BINDING PROTEINS

FULL TEXT: 18179 lines

5/6/12 (Item 12 from file: 654)

02080308

RESERVOIR CHEMICAL SENSORS

[ Universal sensor for a variety of measurement techniques, detection of water pollutants, medical diagnosis]

FULL TEXT: 1492 lines

~~5/6/13 (Item 13 from file: 654)~~

~~02015085~~

~~FLUORESCENT CONJUGATES FOR ANALYSIS OF MOLECULES AND CELLS~~

~~FULL TEXT: 676 lines~~

5/6/14 (Item 1 from file: 348)

00513064

**ORDER fax of complete patent from KR SourceOne. See HELP ORDER348**

**Antimicrobial peptides and their use against plant pathogens.**

**Antimikrobielle Peptide und ihre Verwendung gegen Pflanzenpathogene.**

**Peptides antimicrobiens et leur utilisation contre les pathogenes des plantes.**

**LANGUAGE (Publication,Procedural,Application): English; English; English**

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	2104
SPEC A	(English)	EPABF1	41191
Total word count - document A			43295
Total word count - document B			0
Total word count - documents A + B			43295

5/6/15 (Item 2 from file: 348)

00244456

**ORDER fax of complete patent from KR SourceOne. See HELP ORDER348**

Competitive homogeneous Assay.

Kompetitiver homogener Test.

Dosage homogene concomitant.

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPBBF1	973
CLAIMS B	(German)	EPBBF1	974
CLAIMS B	(French)	EPBBF1	1095
SPEC B	(English)	EPBBF1	11751
Total word count - document A			0
Total word count - document B			14793
Total word count - documents A + B			14793

5/6/16 (Item 1 from file: 653)

01800311

FLUORESCENT CONJUGATES FOR ANALYSIS OF MOLECULES AND CELLS

FULL TEXT: 687 lines

5/6/17 (Item 2 from file: 653)

01457753

PHYCOBILIPROTEIN FLUORESCENT CONJUGATES

FULL TEXT: 326 lines

5/6/18 (Item 3 from file: 653)

01433986

FLUORESCENT IMMUNOASSAY EMPLOYING A PHYCOBILIPROTEIN LABELED LIGAND OR RECEPTOR

[DETECTION OF A MEMBER]

FULL TEXT: 690 lines

5/6/19 (Item 1 from file: 148)

06813504 SUPPLIER NUMBER: 14522762 (USE FORMAT 7 OR 9 FOR FULL TEXT)

1993 R&D 100 awards: technology's brightest stars: these winners sparkle!

(Research and Development magazine)

WORD COUNT: 12635 LINE COUNT: 01133

5/6/20 (Item 1 from file: 388)

00000001

DEFENSE RESEARCH SCIENCES

Binder: PROGRAM ELEMENT DESCRIPTIVE SUMMARY - FY1989

Service: Army  
Pub. Date: September 22, 1988  
Word Count: 5689  
Pgm.Element: 0601102A

\* FOR FULL TEXT, USE FORMAT 7 OR 9 \*

5/6/21 (Item 1 from file: 669)  
00577767  
Export Administration Regulation; Simplification of Export Administration  
Regulations

WORD COUNT: 452,584

? logoff y

01oct97 10:11:41 User208670 Session D462.3  
\$1.80 0.020 Hrs File434  
\$0.00 162 Type(s) in Format 6  
\$0.00 162 Types  
\$1.80 Estimated cost File434  
\$0.48 0.008 Hrs File5  
\$0.00 33 Type(s) in Format 6  
\$0.00 33 Types  
\$0.48 Estimated cost File5  
\$0.24 0.008 Hrs File155  
\$0.00 16 Type(s) in Format 6  
\$0.00 16 Types  
\$0.24 Estimated cost File155  
\$3.24 0.027 Hrs File654  
\$0.00 98 Type(s) in Format 6  
\$0.00 98 Types  
\$3.24 Estimated cost File654  
\$0.81 0.009 Hrs File73  
\$0.00 9 Type(s) in Format 6  
\$0.00 9 Types  
\$0.81 Estimated cost File73  
\$0.23 0.005 Hrs File76  
\$0.00 9 Type(s) in Format 6  
\$0.00 9 Types  
\$0.23 Estimated cost File76  
\$0.05 0.001 Hrs File265  
\$0.00 16 Type(s) in Format 6  
\$0.00 16 Types  
\$0.05 Estimated cost File265  
\$0.54 0.012 Hrs File144  
\$0.00 8 Type(s) in Format 6  

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\$0.00 8 Types  
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\$0.12 0.004 Hrs File156  
\$0.00 4 Type(s) in Format 6  
\$0.00 4 Types  
\$0.12 Estimated cost File156  
\$0.09 0.003 Hrs File6  
\$0.00 12 Type(s) in Format 6  
\$0.00 12 Types  
\$0.09 Estimated cost File6  

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\$0.36 0.006 Hrs File2  
\$0.00 4 Type(s) in Format 6  
\$0.00 4 Types  
\$0.36 Estimated cost File2

\$0.12 0.002 Hrs File35  
     \$0.00 16 Type(s) in Format 6  
     \$0.00 16 Types  
 \$0.12 Estimated cost File35  
     \$0.03 0.001 Hrs File98  
     \$0.00 4 Type(s) in Format 6  
     \$0.00 4 Types  
 \$0.03 Estimated cost File98  
     \$0.18 0.003 Hrs File8  
     \$0.00 5 Type(s) in Format 6  
     \$0.00 5 Types  
 \$0.18 Estimated cost File8  
     \$0.24 0.004 Hrs File103  
     \$0.00 3 Type(s) in Format 6  
     \$0.00 3 Types  
 \$0.24 Estimated cost File103  
     \$0.81 0.009 Hrs File348  
     \$0.00 22 Type(s) in Format 6  
     \$0.00 22 Types  
 \$0.81 Estimated cost File348  
     \$1.56 0.013 Hrs File653  
     \$0.00 20 Type(s) in Format 6  
     \$0.00 20 Types  
 \$1.56 Estimated cost File653  
     \$0.05 0.001 Hrs File53  
     \$0.00 8 Type(s) in Format 6  
     \$0.00 8 Types  
 \$0.05 Estimated cost File53  
     \$0.18 0.003 Hrs File148  
     \$0.00 14 Type(s) in Format 6  
     \$0.00 14 Types  
 \$0.18 Estimated cost File148  
     \$0.03 0.001 Hrs File62  
     \$0.00 4 Type(s) in Format 6  
     \$0.00 4 Types  
 \$0.03 Estimated cost File62  
     \$0.05 0.003 Hrs File50  
 \$0.05 Estimated cost File50  
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\* and New Year's Day. \*

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FILE 'USPAT' ENTERED AT 11:00:43 ON 16 APR 1998

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\* WELCOME TO THE \*

\* U. S. PATENT TEXT FILE \*

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=> s (bacteria or bacterium or virus or viruses or fungus or fungi) (p) (raman)

48211 BACTERIA  
6767 BACTERIUM  
17849 VIRUS  
13770 VIRUSES  
7679 FUNGUS  
16442 FUNGI  
2693 RAMAN

L1 7 (BACTERIA OR BACTERIUM OR VIRUS OR VIRUSES OR FUNGUS OR FUN  
GI)

(P) (RAMAN)

=> d 1-7

1. 5,721,102, Feb. 24, 1998, Surface enhanced Raman gene probe and methods thereof; Tuan Vo-Dinh, 435/6 [IMAGE AVAILABLE]
2. 5,573,927, Nov. 12, 1996, Antibiotic susceptibility test; Wilfred H. Nelson, 435/32; 356/300, 301, 342; 435/4, 29, 34, 173.1, 808, 849; 436/63, 805 [IMAGE AVAILABLE]
3. 5,502,561, Mar. 26, 1996, Characterization of particles by modulated dynamic light scattering; Darrell K. Hutchins, et al., 356/336, 338 [IMAGE AVAILABLE]
4. 5,434,667, Jul. 18, 1995, Characterization of particles by modulated dynamic light scattering; Darrell K. Hutchins, et al., 356/338, 336 [IMAGE AVAILABLE]
5. 5,293,872, Mar. 15, 1994, Method for distinguishing between calcified atherosclerotic tissue and fibrous atherosclerotic tissue or normal cardiovascular tissue using Raman spectroscopy; Robert R. Alfano, et al., 600/475, 477, 478; 606/7, 14, 15 [IMAGE AVAILABLE]
6. 4,847,198, Jul. 11, 1989, Detection and identification of **bacteria** by means of ultra-violet excited resonance **Raman** spectra; Wilfred H. Nelson, et al., 435/34; 356/301; 435/29, 173.1, 808; 436/63 [IMAGE AVAILABLE]
7. 4,446,370, May 1, 1984, Apparatus for detecting oil in water; John S. Gergely, 250/301; 73/170.29; 340/605; 364/420 [IMAGE AVAILABLE]

=> d kwic 1-7

US PAT NO: 5,721,102 [IMAGE AVAILABLE]

L1: 1 of 7

SUMMARY:



below 270 nm by the organisms and associated media does not interfere with the resonance **Raman** signals since a "window" between the exciting frequency and the onset of fluorescence allows the sensitive detection of resonance-enhanced **Raman** scattered light. The higher the energy of the excited light within the **Raman** window (190-270 nm) the larger the "**Raman** window."

DETDESC:

DETD(23)

From . . . chemotaxonomic markers and the results shown in FIGS. 2-8, it is believed that at wavelengths between 190-260 nm characteristic resonance **Raman** spectra of **bacteria** and other microorganisms can be obtained. Depending upon chemotaxonomic relationships, different organisms, including pathogens i.e., disease causing microorganisms, will give. . . such as on disc which can be rapidly scanned by a computer allowing rapid identification on the basis of resonance **Raman** spectra.

CLAIMS:

CLMS(1)

Having described our invention, what we now claim is:

1. A method for the identification of a **bacterium** which comprises: exciting taxonomic markers in a **bacterium** with a beam of ultra violet energy, some of said energy emitted from the **bacterium** as a lower resonance enhanced **Raman** back scattered energy; collecting the resonance enhance **Raman** back scattered energy substantially in the absence of fluorescence; converting the resonance enhanced **Raman** back scattered energy into spectra which corresponds to the taxonomic markers in said **bacterium**; and displaying the spectra whereby the **bacterium** may be identified.

US PAT NO: 4,446,370 [IMAGE AVAILABLE]

L1: 7 of 7

DETDESC:

DETD(7)

A . . . wavelength for exciting fluorescence in oil, while at the same time reducing unwanted fluorescence from interfering substances such as algae, **bacteria**, and **Raman** signals from water.

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=> s l1 and antibod?

27677 ANTIBOD?  
L2 0 L1 AND ANTIBOD?

=> file jpo

FILE 'JPO' ENTERED AT 11:01:59 ON 16 APR 1998

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\* G P I \*  
\* J A P A N E S E P A T E N T A B S T R A C T S \*  
\* \* \* \* \*

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=> s 12

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3706 BACTERIUM
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407 VIRUSES
1576 FUNGUS
2028 FUNGI
756 RAMAN
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(P) (RAMAN)
5743 ANTIBOD?
L3 0 L1 AND ANTIBOD?
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FILE 'EPOABS' ENTERED AT 11:02:08 ON 16 APR 1998

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=> s 11

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1981 FUNGI
437 RAMAN
L4 1 (BACTERIA OR BACTERIUM OR VIRUS OR VIRUSES OR FUNGUS OR FUN
GI)
(P) (RAMAN)
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=> d

1. US 04847198A, Jul. 11, 1989, Detection and indentification of **bacteria** by means of ultra-violet excited resonance **Raman** spectra; WILFRED H NELSON, et al., C12N 13/00; C12Q 1/04; G01J 3/44

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=> s 14 and antibod

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0 ANTIBOD
L5 0 L4 AND ANTIBOD
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=> s 14 and antibod?

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9129 ANTIBOD?
L6 0 L4 AND ANTIBOD?
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FILE COVERS 1967 - 14 Apr 1998 (980414/ED) VOL 128 ISS 16

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s (bacteri## or virus## or fung##)/ab,bi and raman/ab,bi and antibod?/ab,bi

173612 BACTERI##/AB  
 242377 BACTERI##/BI  
 129290 VIRUS##/AB  
 195927 VIRUS##/BI  
 49527 FUNG##/AB  
 65291 FUNG##/BI  
 74011 RAMAN/AB  
 83550 RAMAN/BI  
 220218 ANTIBOD?/AB  
 240169 ANTIBOD?/BI  
 L1 4 (BACTERI## OR VIRUS## OR FUNG##)/AB,BI AND RAMAN/AB,BI  
 AND ANTIBOD?/AB,BI

=> d bib,ab 1-4

L1 ANSWER 1 OF 4 CA COPYRIGHT 1998 ACS  
 AN 117:107623 CA  
 TI Surface-enhanced resonance **\*Raman\*** scattering spectroscopy  
 as a surface topography probe in plant photosynthetic membranes  
 AU Picorel, R.; Bakhtiari, M.; Lu, T.; Cotton, T. M.; Seibert, M.  
 CS Natl. Renewable Energy Lab., Golden, CO, 80401, USA  
 SO Photochem. Photobiol. (1992), 56(2), 263-70  
 CODEN: PHCBAP; ISSN: 0031-8655  
 DT Journal  
 LA English  
 AB Strong resonance **\*Raman\*** (RR) and surface-enhanced resonance  
**\*Raman\*** scattering (SERRS) signals from carotenoids were  
 detected from thylakoid (stromal-side out) vesicles and inside-out  
 (lumenal-side out) vesicles isolated from spinach chloroplasts. The  
 intensity of the signals from both types of membranes was  
 comparable, indicating that plant carotenoids are exposed on or  
 close to both surfaces or sides of the thylakoid membrane. This is  
 in contrast to previous studies with **\*bacterial\***  
 photosynthetic membranes (Picorel, R. et al., 1988, 1992) that show  
 carotenoids selectively located on the cytoplasmic side. In addn.,  
 strong RR and SERRS signals were detected from stacked and unstacked  
 photosystem-II-enriched membrane fragments, demonstrating that  
 carotenoids are also exposed on both surfaces of the appressed  
 region of the thylakoid membrane. **\*Antibodies\*** against the  
 photosystem (PS) II extrinsic proteins blocked SERRS signals from  
 stacked PS II membrane fragments, but only partially affected the  
 SERRS signals from unstacked membranes. The results indicate that  
 these **\*antibodies\***, which preferentially cover the surface  
 of the original lumenal-side of the appressed region, act as spacers  
 between the membrane and SERRS electrode surfaces. The original  
 stromal-side of the appressed region is unaffected. These findings  
 verify the distance sensitivity of the SERRS technique and  
 underscore the above conclusion about the location of carotenoids in  
 the appressed regions. Finally, SERRS signals are sensitive to  
 membrane aging and storage temp.; caution is suggested to those  
 applying SERRS spectroscopy to intact membrane systems.

L1 ANSWER 2 OF 4 CA COPYRIGHT 1998 ACS  
 AN 113:19635 CA  
 TI Surface-enhanced ~~**\*Raman\***~~ spectroscopy of biomolecules. Part  
 II. Application of short- and long-range components of SERS to the  
 study of the structure and function of membrane proteins  
 AU Nabiev, I. R.; Chumanov, G. D.; Efremov, R. G.

CS M. M. Shemyakin Inst. Bioorg. Chem., Moscow, 117871, USSR  
SO J. Raman Spectrosc. (1990), 21(1), 49-53  
CODEN: JRSPAF; ISSN: 0377-0486  
DT Journal  
LA English  
AB Surface enhanced **\*Raman\*** (SER) spectra of bacteriorhodopsin (BRh) in the purple membranes of Halobacterium halobium, rhodopsin (Rh) in the photoreceptor disks of rod outer segments and complexes of Rh with monoclonal **\*antibodies\*** and photoreceptor disks closed with the cytoplasmic surface inwards were analyzed. After adsorption of the membrane proteins on silver electrodes treated via an oxidn.-redn. cycle (ORC) and on unaggregated silver hydrosols with a mean particle diam. about 15 nm, the short-range enhancement mechanisms was shown; it may be used to study the topog. of the membrane-bound complexes. In this case adsorption prevents photoinduced conformational transitions of the pigments. If the BRh or Rh mols. are adsorbed on partially aggregated hydrosols with a characteristic particle size about 100 nm or on 'smooth' (i.e. not roughened by the ORC) electrodes, the SERS mechanism has a longer range character. Hence it is possible to detect SER spectra which are similar to those obtained in soln. but at concns. two to three orders of magnitude lower. Under such conditions adsorption does not influence photochem. transformations of **\*bacterial\*** and visual rhodopsins. The potential variation on the smooth electrode near the zero charge for silver is accompanied by accumulation of K610, the kinetic intermediate of the BRh photocycle. At the same time, the content of the main form, BRh570, decreases.

L1 ANSWER 3 OF 4 CA COPYRIGHT 1998 ACS  
AN 106:45958 CA  
TI Purification and structural characterization of herpes simplex **\*virus\*** glycoprotein C  
AU Kikuchi, Gary E.; Baker, Scott A.; Merajver, Sofia D.; Coligan, John E.; Levine, Myron; Glorioso, Joseph C.; Nairn, Roderick  
CS Med. Sch., Univ. Michigan, Ann Arbor, MI, 48109, USA  
SO Biochemistry (1987), 26(2), 424-31  
CODEN: BICHAW; ISSN: 0006-2960  
DT Journal  
LA English  
OS CJACS  
AB Purifn. of herpes simplex **\*virus\*** glycoprotein C (gC) in microgram amts. yielded sufficient material for an anal. of its secondary structure. Purifn. was facilitated by using the mutant **\*virus\*** gC-3 which bears a point mutation that interrupts the putative hydrophobic membrane anchor sequence, causing the secretion of gC-3 protein into the cell culture medium. The gC-3 protein was purified by size fractionation of concd. culture medium from infected cells on a gel-filtration column of Sephacryl S-200, followed by immunoaffinity chromatog. on a column of gC-specific monoclonal **\*antibodies\*** crosslinked to a protein A-Sepharose CL-4B matrix. Purified gC-3 had a mol. wt. of 130,000 as detd. by SDS-PAGE (the size expected for gC), was reactive with gC-specific monoclonal **\*antibodies\*** in protein immunoblots, and contained amino acid sequences characteristic of gC as detd. by radiochem. amino acid microsequence analyses. Polyclonal antisera obtained from a rabbit immunized with gC-3 reacted with wild-type gC in immunopptn., enzyme immunoassay, and immunoelectroblot (Western blot) assays. Deglycosylation by treatment with trifluoromethanesulfonic acid reduced the mol. wt. of gC-3 by .apprx.35%. Analyses of both native and deglycosylated gC-3 by

**\*Raman\*** spectroscopy showed that the native mol. consists of .apprx.17% .alpha.-helix, 24% .beta.-sheet, and 60% disordered secondary structures, whereas deglycosylated gC-3 consists of .apprx.8% .alpha.-helix, 10% .beta.-sheet, and 81% disordered structures. These data were in good agreement with the 11% .alpha.-helix, 18% .beta.-sheet, 61% .beta.-turn, and 9% disordered structures calcd. from Chou-Fasman anal. of the primary sequence of gC-3.

L1 ANSWER 4 OF 4 CA COPYRIGHT 1998 ACS

AN 104:181730 CA

TI Immunochemistry, physical chemistry and biology of 2',5'-oligoadenylates

AU Johnston, Margaret I.; Hearl, William G.; White, J. Christopher; Imai, Jiro; Torrence, Paul F.; Williams, Robert W.

CS Natl. Inst. Health, Unif. Serv. Univ. Health Sci., Bethesda, MD, 20814-4799, USA

SO Prog. Clin. Biol. Res. (1985), 202(2-5A Syst.), 37-45  
CODEN: PCBRD2; ISSN: 0361-7742

DT Journal

LA English

AB Monoclonal **\*antibodies\*** directed against 2'-5'-oligoadenylates (2-5A) were developed and characterized; 2',5'-oligoadenylate-protein complexes possess at least 3 distinct antigenic surfaces, defined primarily by the ribose-phosphate backbone. A schematic model for the 3 epitopes is presented.  
**\*Antibodies\*** directed against 2-5A, in conjunction with other techniques, were employed to quantify 2-5A in various tissues of pathogen-free mice. Levels of 2-5A were in the range of 400-800 fmole/gm. Mice injected with poly(I).cntdot.poly(C) or encephalomyocarditis **\*virus\*** (EMCV) showed elevated levels of 2-5A. Administration of poly(I).cntdot.poly(C) or EMCV increased the level of 2-5A in different tissues to different extents.  
**\*Raman\*** spectroscopy indicated distinct differences in bands arising from the backbone portion of 2-5A relative to those of 3-5A. The most striking finding was the appearance of a strong, sharp band at 1460 cm<sup>-1</sup> in the spectra of 5'-monophosphorylated 2-5A's; this band was barely detectable in the core or triphosphorylated 2-5A. Apparently, 5'-monophosphorylated 2-5A's possess a unique conformational feature that distinguish them from cores and 5'-triphosphorylated forms.

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16343155 Genuine Article#: YV289 Number of References: 44  
 Title: UV resonance %%%Raman%%% spectroscopy of DNA and protein  
 constituents of %%%viruses%%: Assignments and cross sections for  
 excitations at 257, 244, 238, and 229 nm  
 Author(s): Wen ZQ; Thomas GJ (REPRINT)  
 Corporate Source: UNIV MISSOURI,SCH BIOL SCI, DIV CELL BIOL &  
 BIOPHYS/KANSAS CITY//MO/64110 (REPRINT); UNIV MISSOURI,SCH BIOL SCI,  
 DIV CELL BIOL & BIOPHYS/KANSAS CITY//MO/64110  
 Journal: BIOPOLYMERS, 1998, V45, N3-(MAR), P247-256  
 ISSN: 0006-3525 Publication date: 19980300  
 Publisher: JOHN WILEY & SONS INC, 605 THIRD AVE, NEW YORK, NY 10158-0012  
 Language: English Document Type: ARTICLE

Geographic Location: USA

Subfile: CC LIFE--Current Contents, Life Sciences

Journal Subject Category: BIOCHEMISTRY & MOLECULAR BIOLOGY; BIOPHYSICS

Abstract: Ultraviolet resonance Raman (UVRR) spectra of H<sub>2</sub>O and D<sub>2</sub>O

solutions of the nucleoside (dA, dG, dC, dT) and aromatic amino acid (Phe, Trp, Tyr) constituents of DNA viruses have been obtained with laser excitation wavelengths of 257, 244, 238, and 229 nm. Using the 981 cm<sup>-1</sup> marker of Na<sub>2</sub>SO<sub>4</sub> as an internal standard, Raman frequencies and scattering cross sections were evaluated for all prominent UVRR bands at each excitation wavelength. The results show that UVRR cross sections of both the nucleosides and amino acids are strongly dependent on excitation wavelength and constitute sensitive and selective probes of the residues. The results provide a library of UVRR marker bands for structural analysis of DNA viruses and other nucleoprotein assemblies.

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Descriptors--Author Keywords: uv resonance Raman spectroscopy ; Raman cross section ; hypochromism ; DNA ; deoxynucleoside ; protein ; aromatic amino acid ; virus assembly

Identifiers--KeyWord Plus(R): HYDROGEN-DEUTERIUM EXCHANGE; AROMATIC AMINO-ACIDS; SATURATION SPECTROSCOPY; LASER EXCITATION; NUCLEIC-ACIDS; PRD1 VIRUS; PROFILES; DYNAMICS; ORIENTATION; TRYPTOPHAN

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14537581 Genuine Article#: TW173 Number of References: 7  
Title: DAIRY PRODUCT ANALYSIS - IDENTIFICATION OF %MICROORGANISMS% BY  
MIDINFRARED SPECTROSCOPY AND DETERMINATION OF CONSTITUENTS BY  
%RAMAN%-SPECTROSCOPY  
Author(s): FEHRMANN A; FRANZ M; HOFFMANN A; RUDZIK L; WUST E  
Corporate Source: MILCHWIRTSCHAFTLICHE LEHR &  
UNTERSUCHUNGSANSTALT, HEISTERBERGALLEE 12/D-30453 HANNOVER//GERMANY//;  
FACHHSCH HANNOVER/D-30453 HANNOVER//GERMANY/  
Journal: JOURNAL OF AOAC INTERNATIONAL, 1995, V78, N6 (NOV-DEC), P1537-1542  
ISSN: 1060-3271  
Language: ENGLISH Document Type: ARTICLE  
Geographic Location: GERMANY  
Subfile: SciSearch; CC AGRI--Current Contents, Agriculture, Biology &  
Environmental Sciences  
Journal Subject Category: CHEMISTRY, ANALYTICAL  
Abstract: Identification of microorganisms by traditional microbiological  
methods is time consuming. The German Federal Health Office has  
developed a method using mid-infrared spectroscopy to identify  
microorganisms rapidly. This method has been modified for application  
to microorganisms important in the dairy industry. Mid- and  
near-infrared spectroscopies are well-established methods for  
quantitative measurements of fat, protein, lactose, and solid content  
in a variety of products. A disadvantage of both methods is the huge  
absorption due to water; extraction of other components is complicated  
and can be achieved only statistically. With Raman spectroscopy, water  
causes less absorption. We investigated the use of Raman spectroscopy  
as a quantitative method for milk powder.

Identifiers--KeyWords Plus: TRANSFORM  
Research Fronts: 94-1156 001 (MULTIVARIATE CALIBRATION; ARTIFICIAL NEURAL  
NETWORKS; PARTIAL LEAST-SQUARES REGRESSION; NEAR-INFRARED SPECTROSCOPY;  
HUMAN ACUTE TOXICITY PREDICTION)

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DIALOG(R) File 434: Scisearch(R) Cited Ref Sci  
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12698808 Genuine Article#: MG624 Number of References: 61  
Title: ULTRAVIOLET MICRO-%RAMAN% SPECTROGRAPH FOR THE DETECTION OF  
SMALL NUMBERS OF %BACTERIAL%-CELLS

Author(s): CHADHA S; NELSON WH; SPERRY JF

Corporate Source: UNIV RHODE ISL, DEPT CHEM/KINGSTON//RI/02881; UNIV RHODE ISL, DEPT CHEM/KINGSTON//RI/02881; UNIV RHODE ISL, DEPT MICROBIOL/KINGSTON//RI/02881

Journal: REVIEW OF SCIENTIFIC INSTRUMENTS, 1993, V64, N11 (NOV), P3088-3093  
ISSN: 0034-6748

Language: ENGLISH Document Type: ARTICLE

Geographic Location: USA

Subfile: SciSearch; CC PHYS--Current Contents, Physical, Chemical & Earth Sciences; CC ENGI--Current Contents, Engineering, Technology & Applied Sciences

Journal Subject Category: PHYSICS, APPLIED; INSTRUMENTS & INSTRUMENTATION

Abstract: The construction of a practical UV micro-Raman spectrograph capable of selective excitation of bacterial cells and other microscopic samples has been described. A reflective objective is used to focus cw laser light on a sample and at the same time collect the scattered light at 180-degrees. With the aid of a quartz lens the image produced is focused on the slits of a spectrograph equipped with a single 2400 grooves/mm grating optimized for 250 nm. Spectra were detected by means of a blue-intensified diode array detector. Resonance Raman spectra of *Bacillus subtilis* and *Flavobacterium capsulatum* excited by the 257.2 nm output of a cw laser were recorded in the 900-1800 cm<sup>-1</sup> region. Bacterial cells were immobilized on a quartz plate by means of polylysine and were counted visually. Cooling was required to retard sample degradation. Sample sizes ranged from 1 to 50 cells with excitation times varying from 15 to 180 s. Excellent spectra have been obtained from 20 cells in 15 s using a spectrograph having only 3% throughput.

Identifiers--KeyWords Plus: UV RESONANCE RAMAN; AROMATIC-AMINO-ACIDS; PULSED LASER EXCITATION; DECAY CHARACTERISTICS; BACILLUS-MEGATERIUM; LIVE BACTERIA; LIVING CELLS; STEADY-STATE; SPECTROSCOPY; PROFILES

Research Fronts: 91-3706 001 (CONFORMATIONAL STABILITY; VIBRATIONAL ASSIGNMENT; METHYL VINYL SILANE)

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12067190 Genuine Article#: KJ032 Number of References: 325  
 Title: NEW DEVELOPMENTS IN RAMAN-SPECTROSCOPY OF BIOLOGICAL-SYSTEMS  
 Author(s): FABIAN H; ANZENBACHER P  
 Corporate Source: INST BIODIAGNOST, MOLEC SPECT SECT, 435 ALLICE AVE/WINNIPEG  
 R3B 1Y6/MB/CANADA/; MAX DELBRUCK CTR MOLEC MED/O-1115 BERLIN//GERMANY//;  
 CZECHOSLOVAK ACAD SCI, BIOPHARM RES INST/CS-50005 HRADEC  
 KRALOVE//CZECHOSLOVAKIA/

Journal: VIBRATIONAL SPECTROSCOPY, 1993, V4, N2 (JAN 14), P125-148  
 ISSN: 0924-2031

Language: ENGLISH Document Type: REVIEW

Geographic Location: CANADA; GERMANY; CZECHOSLOVAKIA

Subfile: SciSearch; CC PHYS--Current Contents, Physical, Chemical & Earth  
 Sciences

Journal Subject Category: SPECTROSCOPY; CHEMISTRY, ANALYTICAL; CHEMISTRY,  
 PHYSICAL

Abstract: ~~The objective of the present article is to review the recent~~  
 developments in Raman spectroscopy of biological materials. After a  
 brief description of technical aspects of the instrumentation and  
 procedures the broad range of biological systems studied by many

scientists using a wide variety of techniques is discussed.

Illustrative examples of experimental studies are given to indicate the different possibilities and the present status of Raman spectroscopy in various fields of biochemistry and biomedicine.

Descriptors--Author Keywords: RAMAN SPECTROMETRY ; BIOLOGICAL SYSTEMS ;  
FOURIER TRANSFORM ; RESONANCE RAMAN SPECTROMETRY ; REVIEW ;  
SURFACE-ENHANCED RAMAN SPECTROMETRY

Identifiers--KeyWords Plus: ENHANCED RESONANCE %%%RAMAN%%% ; PROTEIN  
SECONDARY-STRUCTURE; CYTOCHROME-C-OXIDASE; %%%BACTERIAL%%%  
PHOTOSYNTHETIC MEMBRANES; SULFITE REDUCTASE HEMOPROTEIN; COLLOIDAL  
SILVER PARTICLES; NORMAL-COORDINATE ANALYSIS; DNA RESTRICTION FRAGMENT;  
BLUE COPPER PROTEINS; NORMAL-MODE ANALYSIS

Research Fronts: 91-0618 001 (PHOTOSYNTHETIC REACTION CENTERS;  
CHLOROPHYLL FLUORESCENCE; PHOTOSYSTEM-II MEMBRANES; PRIMARY  
ELECTRON-TRANSFER; PROTEIN PROTEIN INTERACTIONS)

91-3604 001 (FOURIER-TRANSFORM INFRARED-SPECTROSCOPY; PROTEIN SECONDARY  
STRUCTURE; VIBRATIONAL CIRCULAR-DICHROISM SPECTRA; BOVINE  
ALPHA-LACTALBUMIN)

91-7402 001 (LASER RAMAN-SPECTROSCOPY; DNA RECOGNITION; TITRATION  
BEHAVIOR OF INDIVIDUAL TYROSINE RESIDUES)

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90-4255 001 (CHEMICAL CLASSIFICATION; TAXONOMIC POSITION OF LISTERIA STRAINS; SULFATE-REDUCING BACTERIA)

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 Author(s): MANOHARAN R; GHIAMATI E; SPERRY JF; NELSON WH  
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Title: BACTERIA ARE COUNTED QUICKLY IN WATER THROUGH LASER-EXCITED  
RAMAN-SPECTRA  
Journal: LASER FOCUS WITH FIBEROPTIC TECHNOLOGY, 1979, V15, N9, P34&  
Language: ENGLISH    Document Type: ARTICLE  
Subfile: CC ENGI--Current Contents, Engineering, Technology & Applied  
Sciences

2/5/751    (Item 8 from file: 5)  
DIALOG(R)File 5:BIOSIS PREVIEWS(R)  
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13359092 BIOSIS Number: 99359092

Theory, design, and characterization of a microdialysis flow cell for Raman spectroscopy

Tuma R; Thomas G J Jr

Div. Cell Biol. Biophysics, Sch. Biol. Sci., Univ. Missouri-Kansas City, Kansas City, MO 64110, USA

Biophysical Journal 71 (6). 1996. 3454-3466.

Full Journal Title: Biophysical Journal

ISSN: 0006-3495

Language: ENGLISH

Print Number: Biological Abstracts Vol. 103 Iss. 004 Ref. 046970

The theory, design, and application of a dialysis flow cell for Raman spectroscopy are described. The flow cell permits rapid collection of Raman spectra concurrent with the efflux of small solute molecules or ions into a solution of macromolecules and is well suited to acquisition of data during hydrogen-isotope exchange reactions of biological molecules. Kinetic parameters of the device are described by a diffusion model, which accounts satisfactorily for the observed rates of efflux of deuterium oxide ( $k_{2-H} = 0.30 \text{ min}^{-1}$ ), calcium ions ( $k_{Ca} = 0.10 \text{ min}^{-1}$ ) and EGTA ( $k_{EGTA} = 0.07 \text{ min}^{-1}$ ). Application to the kinetics of glutamate protonation in a peptide copolymer (poly(Glu, Lys, Tyr)) shows that pH-titration rates as high as 3.3 pH units/min can be monitored. It is also shown that one can extract first-order hydrogen-isotope exchange rate constants from measured second-order exchanges by taking into account the rate of entry of  $2H_2O$  effluent into the bulk  $H_2O$  solution. Deuterium exchanges of the single-stranded polyribonucleotides poly(rA) and poly(rU) and of the double-stranded RNA genome from bacteriophage phi-6 have been investigated. The measured nucleotide base exchange rates are comparable with those determined previously by other methods. The results indicate that base exchanges as fast as approx  $2 \text{ min}^{-1}$  can be determined reliably with the present design. Application of the Raman flow cell to hydrogen-isotope exchange of the basic pancreatic trypsin inhibitor confirms consistency with results obtained previously on this protein by tritiation and NMR techniques.

Descriptors/Keywords: RESEARCH ARTICLE; %BACTERIOPHAGE% PHI-6; MICRODIALYSIS FLOW CELL; %RAMAN% SPECTROSCOPY; HYDROGEN-ISOTOPE EXCHANGE REACTIONS; FIRST-ORDER HYDROGEN-ISOTOPE EXCHANGE RATE CONSTANT; METHODOLOGY; POLY(RA); SINGLE-STRANDED POLYRIBONUCLEOTIDES; POLY(RU); DOUBLE STRANDED RNA; BASIC PANCREATIC TRYPSIN INHIBITOR; THEORY; KINETIC PARAMETERS; DESIGN; CHARACTERIZATION; ANALYTICAL METHOD

Concept Codes:

\*10050 Biochemical Methods-General

\*10060 Biochemical Studies-General

\*10502 Biophysics-General Biophysical Studies

Biosystematic Codes:

02702 Cystoviridae (1993- )

Super Taxa:

Microorganisms; Viruses

2/5/765 (Item 22 from file: 5)

DIALOG(R)File 5:BIOSIS PREVIEWS(R)

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11272729 BIOSIS Number: 97472729

Analytical fingerprinting methods

Magee J T

Dep. Microbiology Public Health Lab., Univ. Hosp. Wales, Cardiff CF4 4XW, UK

0 (0). 1994. 523-553.

Full Journal Title: Goodfellow, M. and A. G. O'Donnell (Ed.). Modern Microbiological Methods: Chemical methods in prokaryotic systematics. xxvi+576p. John Wiley and Sons Ltd.: Chichester, England, UK; New York, New York, USA. ISBN 0-471-94191-3.

ISSN: \*

Language: ENGLISH

Document Type: BOOK

Print Number: Biological Abstracts/RRM Vol. 046 Iss. 011 Ref. 170592

Descriptors/Keywords: BOOK CHAPTER; %BACTERIA%; DATA ANALYSIS; PYROLYSIS MASS SPECTROMETRY; IR SPECTROMETRY; UV-RESONANCE %RAMAN% SPECTROSCOPY; ANALYTICAL METHOD

Concept Codes:

- \*10504 Biophysics-General Biophysical Techniques
- \*10506 Biophysics-Molecular Properties and Macromolecules
- \*31000 Physiology and Biochemistry of Bacteria
- \*32000 Microbiological Apparatus, Methods and Media

Biosystematic Codes:

05000 Bacteria-General Unspecified (1992- )

Super Taxa:

Microorganisms; Bacteria; Eubacteria

2/5/796 (Item 53 from file: 5)  
DIALOG(R)File 5:BIOSIS PREVIEWS(R)  
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6874241 BIOSIS Number: 37068620

DETECTION AND IDENTIFICATION OF %BACTERIA% BY MEANS OF UV EXCITED RESONANCE %RAMAN% SPECTRA US PATENT-4847198. JULY 11 1989

NELSON W H; DALTERIO R A; SPERRY J F

KINGSTON, R.I., USA.

Patent Assignee: THE BOARD OF GOVERNORS FOR HIGHER EDUCATION, STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS.

OFF GAZ U S PAT TRADEMARK OFF PAT 1104 (2). 1989. 1228. CODEN: OGUPE

Full Journal Title: Official Gazette of the United States Patent and Trademark Office Patents

Language: ENGLISH

Document Type: PATENT

Descriptors/Keywords: USCL-435-34 TAXONOMIC MARKERS

Concept Codes:

- \*06504 Radiation-Radiation and Isotope Techniques
- \*31000 Physiology and Biochemistry of Bacteria
- \*32000 Microbiological Apparatus, Methods and Media
- 00504 General Biology-Taxonomy, Nomenclature and Terminology

2/5/917 (Item 23 from file: 76)  
DIALOG(R)File 76:Life Sciences Collection  
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01254225 2001683

Detection and identification of %bacteria% by means of ultra-violet excited resonance %Raman% spectroscopy.

Nelson, W.H.; Dalterio, R.A.; Sperry, J.F.

Board of Governors, State of Rhode Island, Providence, RI (USA)

PATENT NUMBER: US Patent 4,847,198

PATENT CLASSIFICATION: US Cl. 435-34 Int. Cl. C12Q 1/04; C12Q C12N 13/00,

G01J 3/44

(1989.)

DOCUMENT TYPE: Patent LANGUAGE: ENGLISH

SUBFILE: Microbiology Abstracts Section A: Industrial and Applied  
Microbiology

The authors describe a method for the identification of a bacterium which comprises: exciting taxonomic markers in a bacterium with a beam of ultraviolet energy, some of said energy emitted from the bacterium as a lower resonance enhanced Raman back-scattered energy collecting the resonance enhanced Raman back-scattered energy substantially in the absence of fluorescence converting the resonance enhanced Raman back-scattered energy into spectra which corresponds to the taxonomic markers in said bacterium and displaying the spectra whereby the bacterium may be identified.

DESCRIPTORS: Raman spectroscopy; patents  
IDENTIFIERS: detection; identification; bacteria; U.V. radiation  
SECTION HEADING: 01116 --Bacteria

2/5/934 (Item 40 from file: 76)  
DIALOG(R)File 76:Life Sciences Collection  
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00592782 0339029  
Experimental Aspects in Raman Spectroscopy of Micro-Organisms.  
O'Sullivan, R.A.; Santo, L.  
Royal Melbourne Inst. Technol., Box 2476V, G.P.O. Melbourne, Victoria 3000,  
Australia  
CAN. J. SPECTROSC. vol. 26, no. 3, pp. 143-148 (1981.)  
DOCUMENT TYPE: Journal article LANGUAGE: ENGLISH SUMMARY LANGUAGE: FRENCH  
SUBFILE: Microbiology Abstracts Section B: Bacteriology

Descriptions are given of several effects which can give rise to spurious "Raman lines" when Raman spectroscopy is carried out on a suspension of bacteria, such as Escherichia coli. These effects include the interaction of Mie scattering by cell clumps with grating ghosts and the rotational Raman lines of the ambient air, as well as variations in the luminescence from the medium and the cells themselves. Evidence is given that illumination for times of the order of 1 second at laser powers of 10-400 mW is sufficient to cause gross changes in E. coli cells. Ways of avoiding or identifying the various artefacts are discussed.

DESCRIPTORS: Escherichia coli; Raman spectroscopy; cells  
IDENTIFIERS: interaction; factors affecting  
SECTION HEADING: 02722 --Biodegradation, growth, nutrition and leaching

2/5/1016 (Item 10 from file: 8)  
DIALOG(R)File 8:Ei Compendex(R)  
(c) 1998 Engineering Info. Inc. All rts. reserv.

04001856 E.I. No: EIP94122453039  
Title: Direct colorimetric detection of virus by a polymerized bilayer assembly  
Author: Charych, Deborah H.; Nagy, Jon O.; Spevak, Wayne; Ager, Joel; Bednarski, Mark D.  
Corporate Source: Lawrence Berkeley Lab, Berkeley, CA, USA  
~~Conference Title: Proceedings of the MRS Symposium~~  
Conference Location: Boston, MA, USA Conference Date: 19931129-19931203  
E.I. Conference No.: 20330  
Source: Biomolecular Materials by Design Materials Research Society



Symposium Proceedings v 330 1994. Materials Research Society, Pittsburgh, PA, USA. p 295-307

Publication Year: 1994

CODEN: MRSPDH ISSN: 0272-9172

Language: English

Document Type: CA; (Conference Article) Treatment: X; (Experimental)

Journal Announcement: 9501W3

Abstract: Screening and detecting virus by receptor-ligand interactions presents an important challenge in medical and environmental diagnostics, and in drug development. We have developed a direct colorimetric detection method based on a polymeric bilayer assembly. The bilayer is composed of a self-assembled monolayer of octadecyl siloxane and a Langmuir-Blodgett layer of polydiacetylene. The polydiacetylene layer is functionalized with receptor-specific ligands such as analogs of sialic acid. The ligand serves as a molecular recognition element, while the conjugated polymer backbone signals binding at the surface by a chromatic transition. The color transition is readily visible to the naked eye as a blue to red color change and can be quantified by visible absorption spectroscopy. The color transition can be inhibited by the presence of soluble inhibitors. Raman spectroscopic analysis shows that the color transition may arise from binding induced strain on the material resulting in bond elongation and conjugation length reduction. (Author abstract) 19 Refs.

Descriptors: %%%Viruses%%%; Calorimetry; Biochemistry; Diagnosis; Polymers; Polyacetylenes; Phase transitions; Color; Absorption spectroscopy; %%%Raman%%% spectroscopy

Identifiers: Polymerized bilayer assembly; Octadecyl siloxanes; Langmuir Blodgett layer; Polydiacetylenes; Ligands; Sialic acid; Molecular recognition element; Chromatic transition

Classification Codes:

461.9 (Biology); 944.6 (Temperature Measurements); 801.2 (Biochemistry); 461.6 (Medicine); 815.1 (Polymeric Materials); 741.3 (Optical Devices & Systems)  
461 (Biotechnology); 944 (Moisture, Pressure & Temperature, & Radiation Measuring Instruments); 801 (Chemical Analysis & Physical Chemistry); 815 (Plastics & Polymeric Materials); 741 (Optics & Optical Devices)  
46 (BIOENGINEERING); 94 (INSTRUMENTS & MEASUREMENT); 80 (CHEMICAL ENGINEERING); 81 (CHEMICAL PROCESS INDUSTRIES); 74 (OPTICAL TECHNOLOGY)

2/5/1025 (Item 19 from file: 8)  
DIALOG(R)File 8: Ei Compendex(R)  
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03319700 E.I. Monthly No: EIM9110-051144

Title: Surface-enhanced hyper-Raman and near-IR FT-Raman studies of biomolecules.

Author: Yu, Nai-Teng; Nie, Shuming

Corporate Source: Georgia Inst of Technology, Atlanta, GA, USA

Conference Title: International Conference on Laser Applications in Life Sciences Part 1 (of 2)

Conference Location: Moscow, USSR Conference Date: 19900827

Sponsor: Moscow State Univ, Int Laser Cent; USSR Acad of Science, M.M. Shemyakin Inst of Bio-organic Chemistry; N.G. Chernyshevsky Saratov State Univ; SPIE; Joint Venture 'BioChemMack', USSR/Austria/Germany; et al

E.I. Conference No.: 14932

Source: Laser Diagnostics of Biological Molecules and Living Cells - Linear and Nonlinear Methods - Proceedings of SPIE - The International Society for Optical Engineering v 1403 pt 1. Publ by Int Soc for Optical Engineering, Bellingham, WA, USA. p 112-124

Publication Year: 1991

CODEN: PSISDG ISSN: 0277-786X  
Language: English  
Document Type: PA; (Conference Paper) Treatment: A; (Applications); X;  
(Experimental)  
Journal Announcement: 9110

Abstract: This report describes the application of two recently developed spectroscopic techniques, surface-enhanced hyper-Raman and near-IR-excited Fourier transform (FT)-Raman, in the structural characterization of biological molecules. Surface-enhanced hyper-Raman scattering (SEHRS) exhibits selection rules that are different from those of normal Raman, resonance Raman and IR absorption, and it is thus capable of providing new vibrational information unobtainable through existing methodologies. The technique of near-IR-excited Ft-Raman almost completely eliminates fluorescence interference and photolytic sample decomposition, problems that are frequently encountered in laser Raman studies of biological samples. Presented as highlights in this report are: (1) a surface hyper-Raman study of an ocular lens chromophore (3-hydroxykynurenine) and copper chlorophyllin, (2) an FT-~~%%Raman%%~~ study of three groups of photolabile biomolecules, cobalamins, ~~%%bacteriorhodopsin%%~~ and chlorophylls, and (3) near-IR Ft-~~%%Raman%%~~ spectra of cytochrome c and model porphyrins. (Edited author abstract) 46 Refs.

Descriptors: \*BIOLOGICAL MATERIALS--\*Spectroscopic Analysis; MOLECULES--Spectroscopic Analysis; SPECTROSCOPY, RAMAN; SPECTROSCOPY, INFRARED; LASER BEAMS--Applications

Identifiers: BIOMOLECULES; PORPHYRIN; PYRIDINE; COBALAMINS;  
BATERIORHODOPSIN

Classification Codes:

461 (Biotechnology); 931 (Applied Physics); 744 (Lasers); 801  
(Chemical Analysis & Physical Chemistry)  
46 (BIOENGINEERING); 93 (ENGINEERING PHYSICS); 74 (OPTICAL TECHNOLOGY)  
; 80 (CHEMICAL ENGINEERING)

2/5/1035 (Item 29 from file: 8)  
DIALOG(R)File 8: Ei Compendex(R)  
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02104547 E.I. Monthly No: EIM8607-046997

Title: INTEGRATING A RAMAN MICROPROBE INTO A GENERAL MICROANALYTICAL PROBLEM-SOLVING SCHEME.

Author: Andersen, M. E.

Corporate Source: WC McCrone Associates, Inc, Chicago, IL, USA

Conference Title: Microbeam Analysis 1984, Proceedings of the 19th Annual Conference of the Microbeam Analysis Society.

Conference Location: Bethlehem, PA, USA Conference Date: 19840716

Sponsor: Microbeam Analysis Soc, USA

E.I. Conference No.: 05925

Source: Proceedings, Annual Conference - Microbeam Analysis Society 19th.  
Publ by San Francisco Press, San Francisco, CA, USA p 115-120

Publication Year: 1984

CODEN: PCSCD8 ISSN: 0146-6275

Language: English

Document Type: PA; (Conference Paper)

Journal Announcement: 8607

Abstract: The ~~%%Raman%%~~ microprobe is a relatively new ~~%%microbeam%%~~ instrument that is gradually being incorporated into general microanalysis laboratories. As with all microanalytical tools it occupies a special niche in the analytical environment. For certain types of analyses it is unique in its capabilities; for other sorts it offers information similar to that obtainable with other instruments. The applicability of this or any

instrument to a particular problem is determined by a variety of considerations. Capabilities and limitations of the Raman Microprobe are discussed. 4 refs.

Descriptors: \*RAMAN SCATTERING--\*Instruments; MATERIALS TESTING--Microanalysis

Identifiers: RAMAN MICROPROBES; GENERAL MICROANALYSIS LABORATORIES; SPATIAL RESOLUTION; BIREFRINGENT SAMPLES; TRANSPARENT AND OPAQUE PARTICLES; CAPABILITIES AND LIMITATIONS

Classification Codes:

741 (Optics & Optical Devices); 941 (Acoustical & Optical Measuring Instruments); 801 (Chemical Analysis & Physical Chemistry); 421 (Materials Properties); 422 (Materials Testing); 423 (General Materials Properties & Testing)

74 (OPTICAL TECHNOLOGY); 94 (INSTRUMENTS & MEASUREMENT); 80 (CHEMICAL ENGINEERING); 42 (MATERIALS PROPERTIES & TESTING)

2/5/1088 (Item 19 from file: 35)  
DIALOG(R)File 35:Dissertation Abstracts Online  
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01089434 ORDER NO: AAD90-02382

A SURFACE-ENHANCED RAMAN SPECTROSCOPIC STUDY OF ANTIBODY/ANTIGEN-BINDING ON SILVER ELECTRODES (SPECTROSCOPY)

Author: GRABBE, EDITH SZURLEY

Degree: PH.D.

Year: 1989

Corporate Source/Institution: THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL (0153)

DIRECTOR: RICHARD P. BUCK

Source: VOLUME 50/09-B OF DISSERTATION ABSTRACTS INTERNATIONAL.

PAGE 3957. 269 PAGES

Descriptors: CHEMISTRY, ANALYTICAL

Descriptor Codes: 0486

The techniques of surface enhanced ~~%%Raman%%~~ spectroscopy (SERS) and quartz crystal ~~%%microbalance%%~~ (QCM) electrogravimetry were evaluated for their capability to sense and characterize an adsorbed layer of immunoglobulins on the surface of a silver electrode. Adsorptive behavior of human immunoglobulin G (IgG) and its antigens was followed as a function of electrode potential, ionic strength and pH of the phosphate buffer solution. The capacity of these two methods to detect the complexes formed during antibody/antigen reactions was investigated. SERS was used to differentiate between smaller, antigen-rich complexes and insoluble, larger antibody-rich precipitates, formed from mixtures with varying concentration ratios of antibody to antigen. SERS experiments were also conducted to assay the selectivity of the method for categorizing various forms of antigen, that were specific to different sites on the IgG molecule, and their antibody/antigen complexes.

The QCM studies confirmed that the immunochemicals adsorbed over the available potential range. Electrochemical reductions of the disulfide bridges of both antigens and antibodies were observed, the latter displaying a simultaneous molecular reorientation and coverage change. This feature was confirmed by SERS results, which gave added information about the specific amino acid residues which were involved in the restructuring and how they were affected. IgG was found to precipitate the silver ion as the electrode was oxidized, but this could not be monitored with SERS, due to limits in the potential range.

SERS proved capable of distinguishing between large antibody-rich precipitates and smaller antigen-rich complexes. The former were deposited

randomly on the electrode surface with low coverage resulting from the large sizes of these complexes and blockage of surface accessibility. The smaller complexes formed compact layers, adsorbed through a few strong bonds. Antigens appeared to have adsorption sites near their antibody binding sites. These areas were greatly affected by antibody binding, which limited availability of adsorption sites. After complexation, the small adsorption area left exposed to the electrode varied greatly between antigens. This feature allowed different types of antigen complexes to be readily identified. SERS could also detect competitive adsorption processes in a reaction mixture and salting out effects.

2/5/1117 (Item 10 from file: 77)  
DIALOG(R)File 77:Conference Papers Index  
(c) 1998 Cambridge Sci Abs. All rts. reserv.

1859488  
Supplier Accession Number: 85059488 V13N10  
Detection of bacteria by means of resonance Raman and time resolved fluorescence spectroscopies  
Brahma, S.K.; Baek, M.; Deltario, R.; Nelson, W.H.; Sperry, J.F.  
Dep. Chem., Univ. Rhode Island, Kingston, RI 02881, USA  
1985 Pittsburgh Conference and Exhibition on Analytical Chemistry and Applied Spectroscopy 8510177 New Orleans, LA (USA) 25 Feb-1 Mar 1985  
Sponsor not indicated  
No ordering information available at the present time, Abstract No. 606  
Languages: ENGLISH  
Descriptors: PHYSICS AND ASTRONOMY  
Section Heading: PHYSICS AND ASTRONOMY  
Section Class Codes: 8000

2/5/1127 (Item 4 from file: 65)  
DIALOG(R)File 65:Inside Conferences  
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02101288 INSIDE CONFERENCE ITEM ID: CN022011741  
Resonance %Raman% %Bacterial% Identification Studies  
Nelson, W. H.; Brown, C. W.; Sperry, J. F.  
Chemical defense research  
AD REPORTS -NTIS-AD A, 1994; AD-A286742, P: 1065-1082  
(np), 1994, NTIS, 1994  
LANGUAGE: English DOCUMENT TYPE: Conference Papers  
CONFERENCE:  
Chemical defense research-Scientific conference  
SPONSOR: United States Army Edgewood Research, Development and Engineering Center  
DATE: Nov 1993 (199311)

BRITISH LIBRARY ITEM LOCATION: 0678.231000F  
NOTE:  
Held at the Aberdeen Proving Ground, MD  
DESCRIPTORS: chemical defense research; ERDEC

2/5/1153 (Item 7 from file: 6)  
DIALOG(R)File 6:NTIS  
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1141248 NTIS Accession Number: PB85-214864/XAB

Rapid Detection and Identification of Bacteria in Sewage and Natural Waters by Means of Time-Resolved Laser Spectroscopies

Nelson, W. H. ; Sperry, J. F.

Rhode Island Water Resources Center, Kingston.

Corp. Source Codes: 083794000

Sponsor: Geological Survey, Reston, VA. Water Resources Div.

Sep 84 17p

Languages: English

Journal Announcement: GRAI8520

Sponsored by Geological Survey, Reston, VA. Water Resources Div.

NTIS Prices: PC A02/MF A01

Country of Publication: United States

Contract No.: USGS-G-867-02

The authors have excited samples of chromobacteria containing as few as 25 organisms and have obtained excellent spectra with 488 nm excitation. Thus, they have shown that the resonance Raman method potentially is a highly sensitive means of detecting and identifying bacteria. There is potential both for remote detection and detection from complex mixtures. Fluorescence emission data have demonstrated that measurable fluorescence does not occur below 285-290 nm in all of a wide variety of cultures. This is highly significant since most bacteria are not intensely colored and cannot be studied by resonance Raman using visible light, but tend to be fluorescent in the region 300-500 nm. Results suggest that resonance Raman spectra of DNA components taken with 220-280 nm excitation will be obtained with high sensitivity and will contain a maximum amount of information which can be related to the taxonomy of the micro organisms. The time-resolved fluorescence spectra of several types of bacteria have been obtained at various emission wavelengths. Our data suggest the determination of fluorescence lifetimes will be an effective means of bacterial identification even if all the fluorescence components are not resolved.

Descriptors: \*Bacteria; \*Sewage; \*Water resources; Natural resources; Excitation; Ultraviolet spectroscopy; Fluorescence; Raman spectroscopy; Remote sensing; Water pollution; Microorganisms

Identifiers: \*Time resolved spectroscopy; \*Water pollution detection; \*Resonance Raman spectra; \*Laser spectroscopy; \*Laser induced fluorescence; NTISDIOWRT

Section Headings: 13B (Mechanical, Industrial, Civil, and Marine Engineering--Civil Engineering); 6M (Biological and Medical Sciences--Microbiology); 7D (Chemistry--Physical Chemistry); 68D (Environmental Pollution and Control--Water Pollution and Control); 57K (Medicine and Biology--Microbiology); 99A (Chemistry--Analytical Chemistry)

2/5/1154 (Item 8 from file: 6)

DIALOG(R) File 6:NTIS

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1128616 NTIS Accession Number: AD-A153 549/1/XAB

Basic Study to Assess the Potential Usefulness of Resonance Raman Spectroscopy as a Means of Rapidly Detecting and Identifying Bacteria and other Microorganisms

(Final rept. 1 Oct 83-31 Dec 84)

Nelson, W. H.

Rhode Island Univ., Kingston. Dept. of Chemistry.

Corp. Source Codes: 013987005; 410237

Sponsor: Army Research Office, Research Triangle Park, NC.

Report No.: ARO-20545.1-LS

15 Feb 85 15p

Languages: English

Journal Announcement: GRAI8516

NTIS Prices: PC A02/MF A01

Country of Publication: United States

Contract No.: DAAG29-83-K-0136

This past year we have explored the potential uses of Resonance Raman and Fluorescence Lifetime Spectroscopies in the rapid characterization of bacteria. Previously we have shown that chromobacteria can be distinguished on the basis of distinctive resonance Raman spectra. Spectra are excited by low power argon ion laser radiation at 488 nm and are due to the presence of carotenoid pigments. While carotenoid pigments in bacteria generally are not useful for identification purposes, the study of chromobacteria has allowed us to assess the potential sensitivity of resonance Raman spectroscopy in this application. We were able to laser illuminate and count two types of bacteria under a microscope. Because it was possible to see the laser excited bacteria while the resonance Raman spectra were being obtained, it was possible to estimate closely the number of bacteria producing a given spectrum. Such high sensitivity suggests but does not prove that spectra are 'surface enhanced'. It is clear that the resonance Raman technique can be highly sensitive and our experiments suggest that remote detection and detection from mixtures is possible in principle.

Descriptors: \*Bacteria; \*Raman spectroscopy; \*Microorganisms; Carotenoids; Pigments; Remote detectors

Identifiers: NTISDODXA; NTISDODA

Section Headings: 6M (Biological and Medical Sciences--Microbiology); 7D (Chemistry--Physical Chemistry); 6A (Biological and Medical Sciences--Biochemistry); 57K (Medicine and Biology--Microbiology); 99F (Chemistry--Physical and Theoretical Chemistry); 57B (Medicine and Biology--Biochemistry)

2/5/1158 (Item 12 from file: 6)

DIALOG(R)File 6:NTIS

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550639 NTIS Accession Number: PB-261 358/6

Laser Methods of Rapid Detection, Identification, and Quantitation of Human Enteric Viruses in Sewage and Rivers

(Final rept. 1 Jan 75-1 Sep 76)

Nelson, Wilfred H. ; Chang, Pei W.

Rhode Island Univ., Kingston.

Corp. Source Codes: 305500

Sponsor: Office of Water Research and Technology, Washington, D.C.

Report No.: W77-02184; OWRT-A-058-RI(1)

1 Sep 76 33p

Journal Announcement: GRAI7706

NTIS Prices: PC A03/MF A01

Contract No.: DI-14-34-0001-6041; OWRT-A-058-RI

This study has shown that it is possible to obtain Raman spectra of poliovirus in water solution. Since a Raman spectrum can be obtained in minutes or even seconds, in principle, it has been demonstrated that very rapid analysis of viruses is possible. Details of virus preparation, purification, and concentration have been discussed. Polio I spectra are similar to those of plant viruses studied previously, but are sufficiently different to allow spectra to be used for identification purposes. Problems of instrument sensitivity and rapid sample preparation have to be overcome before a virus analysis machine based upon Raman spectroscopy can be used routinely.

Descriptors: \*Water analysis; \*Enterobacteriaceae; \*Viruses; Raman spectroscopy; Water pollution; Chemical analysis; Sewage; Concentration(Composition); Purification; Rivers; Separation; Sensitivity;

Detectors; Fluorescence; Raman spectra; Polioviruses

Identifiers: \*Water pollution detection; Laser induced fluorescence;  
NTISDIOWRT

Section Headings: 6M (Biological and Medical Sciences--Microbiology); 13B  
(Mechanical, Industrial, Civil, and Marine Engineering--Civil Engineering);  
7D (Chemistry--Physical Chemistry); 68D (Environmental Pollution and  
Control--Water Pollution and Control); 57K (Medicine and  
Biology--Microbiology); 99A (Chemistry--Analytical Chemistry)

2/5/1242 (Item 4 from file: 351)  
DIALOG(R)File 351:DERWENT WPI  
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007990618 **Image available**

WPI Acc No: 89-255730/198935

XRAM Acc No: C89-113798

XRFX Acc No: N89-195146

Detection and identification of bacteria - by using emitted light energy,  
resonance enhanced Raman scattering to produce characteristic spectra

Patent Assignee: HIGHER EDUCATION RH (HIGH-N)

Inventor: DALTERIO R A; NELSON W H; SPERRY J F

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Main IPC	Week
US 4847198	A	19890711	US 86916214	A	19861007		198935 B

Priority Applications (No Type Date): US 86916214 A 19861007

Patent Details:

Patent	Kind	Lan	Pg	Filing Notes	Application	Patent
US 4847198	A		12			

Abstract (Basic): US 4847198 A

A method for the identification of a bacterium is claimed which  
comprises (a) exciting taxonomic markers in a bacterium with a beam of  
ultraviolet energy, some of the energy emitted from the %%%bacterium%%  
as a low resonance enhanced %%%Raman%% back scattered energy. (b)  
collecting the resonance enhanced Raman back scattered energy in the  
absence of fluorescence, (c) converting the resonance enhanced Raman  
back scattered energy into spectra which corresponds to the taxonomic  
markers in the bacterium and (d) displaying the spectra so that the  
bacterium may be identified.

ADVANTAGE - The spectra obtd. reflect the differences in the  
organisms which allow the organisms to be readily and rapidly  
identified

Title Terms: DETECT; IDENTIFY; BACTERIA; EMIT; LIGHT; ENERGY; RESONANCE;  
ENHANCE; RAMAN; SCATTERING; PRODUCE; CHARACTERISTIC; SPECTRUM

Derwent Class: D16; J04; S03

International Patent Class (Additional): C12N-013/00; C12Q-001/04;

G01J-003/44

File Segment: CPI; EPI

2/5/1244 (Item 1 from file: 51)  
DIALOG(R)File 51:Food Sci.&Tech.Abs  
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00330811 87-01-b0003 SUBFILE: FSTA

Instrumental methods for rapid microbiological analysis.  
Nelson, W. H. (Editor)

Rossi, T. M.; Warner, I. M.; Neufeld, H. A.; Pace, J. G.; Hutchinson, R. W.; Hadley, W. K.; Waldman, F.; Fulwyler, M.; Hartman, K. A.; Thomas, G. J., Jr.; Fox, A.; Morgan, S. L.; Sinha, M. P.; Hadley, W. K.; Yajko, D. M. 1985 , x + 219pp.

PUBLISHER: USA; VCH Publishers Inc. Dep. Chem., Univ. Rhode Island, Kingston, Rhode Island 02881, USA

NOTE: many ref.

DOCUMENT TYPE: Book ISBN: 0-89573-137-1

LANGUAGE: English

Recent progress in development of techniques for rapid instrumental characterization of microorganisms is described in this book, with several references to applications in the food industry. Each chapter outlines a specific technique for rapid identification of bacteria or viruses, giving details of theory, progress and applications. Chapters are as follows. Bacterial identification using fluorescence spectroscopy, by Rossi, T. M. & Warner, I. M. (pp. 1-50, 134 ref.). Detection of microorganisms by bio- and chemiluminescence techniques, by Neufeld, H. A., Pace, J. G. & Hutchinson, R. W. (pp. 51-65, 20 ref.). Rapid microbiological analysis by flow cytometry, by Hadley, W. K., Waldman, F. & Fulwyler, M. (pp. 67-89, 81 ref.). The identification, interactions and structure of viruses by Raman spectroscopy, by Hartman, K. A. & Thomas, G. J., Jr. (pp. 91-134, 34 ref.). The chemotaxonomic characterization of microorganisms by capillary gas chromatography and gas chromatography-mass spectrometry, by Fox, A. & Morgan, S. L. (pp. 135-164, 58 ref.). Analysis of individual biological particles in air, by Sinha, M. P. (pp. 165-192, 80 ref.). Detection of microorganisms and their metabolism by measurements of electrical impedance, by Hadley, W. K. & Yajko, D. M. (pp. 193-209, 64 ref.). A 9-pp. subject index is included. (LJW)

DESCRIPTORS: Microorganisms--foods, microorganisms detection rapid instrumental methods for, Book; Analytical techniques--foods, microorganisms detection rapid instrumental methods for, Book; Books--foods, microorganisms detection rapid instrumental methods for

SECTION HEADINGS: Food microbiology (SC=b)

2/5/1257 (Item 2 from file: 345)  
DIALOG(R)File 345:Inpadoc/Fam.& Legal Stat.  
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9272560

Basic Patent (No,Kind,Date): US 4847198 A 890711 <No. of Patents: 001>

#### PATENT FAMILY:

UNITED STATES OF AMERICA (US)

Patent (No,Kind,Date): US 4847198 A 890711

DETECTION AND IDENTIFICATION OF BACTERIA BY MEANS OF ULTRA-VIOLET

EXCITED RESONANCE RAMAN SPECTRA (English)

Patent Assignee: GOVERNORS FOR HIGHER EDUCATION (US)

Author (Inventor): NELSON WILFRED H (US); DALTERIO RICHARD A (US);

SPERRY JAY F (US)

Priority (No,Kind,Date): US 916214 A 871007

Applic (No,Kind,Date): US 916214 A 871007

National Class: \* 435034000; 356301000; 435029000; 435173000;  
435808000; 436063000

IPC: \* C12Q-001/04; C12N-013/00; G01J-003/44

Language of Document: English

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>>>No matching display code(s) found in file(s): 6, 8, 50, 62, 65, 73, 78,  
89, 94, 98-99, 105, 108, 155-156, 172, 265, 292, 305, 388, 434, 457,



636, 765

2/PN/1199 (Item 11 from file: 654)  
DIALOG(R)File 654:(c) format only 1998 The Dialog Corp. All rts. reserv.

PATENT NO.: 5,266,498  
ISSUED: November 30, 1993 (19931130)

2/PN/1262 (Item 1 from file: 653)  
DIALOG(R)File 653:(c) format only 1998 The Dialog Corp. All rts. reserv.

PATENT NO.: 4,847,198  
ISSUED: July 11, 1989 (19890711)  
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Processed 10 of 52 files ...  
Processing  
Completed processing all files  
1271 S2  
2436226 ANTIBOD?  
S3 8 S2 AND ANTIBOD?  
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>>>Format 7 is not valid in file 765

3/7/1 (Item 1 from file: 434)  
DIALOG(R)File 434:Scisearch(R) Cited Ref Sci  
(c) 1998 Inst for Sci Info. All rts. reserv.

15007146 Genuine Article#: VC341 Number of References: 77  
Title: BIOPHYSICAL CHARACTERIZATION OF WILD-TYPE AND MUTANT  
BACTERIOPHAGE-IKE MAJOR COAT PROTEIN IN THE VIRION AND IN DETERGENT  
MICELLES

Author(s): WILLIAMS KA; DEBER CM

Corporate Source: HOSP SICK CHILDREN, RES INST, DIV BIOCHEM RES, 555 UNIV  
AVE/TORONTO/ON M5G 1X8/CANADA/; HOSP SICK CHILDREN, RES INST, DIV BIOCHEM  
RES/TORONTO/ON M5G 1X8/CANADA/; UNIV TORONTO, DEPT BIOCHEM/TORONTO/ON  
M5S 1A8/CANADA/

Journal: BIOCHEMISTRY, 1996, V35, N32 (AUG 13), P10472-10483

ISSN: 0006-2960

Language: ENGLISH Document Type: ARTICLE

Abstract: Interactions between the filamentous bacteriophage major coat protein and its environment differ markedly between the membrane-bound assembly intermediate which spans the lipid bilayer and the phage coat protein which makes up the capsid of the virion. Nonetheless, both reflect successful strategies to sequester the hydrophobic regions of the coat protein away from the aqueous milieu. To characterize the roles of individual residues in the conformation, stability, and oligomerization of the coat protein in both the virion and in detergent micelles, wild-type IKE and M13 coat proteins, together with a library of over 40 IKE coat protein mutants, were studied using circular dichroism (CD), fluorescence, and solution nuclear magnetic resonance (NMR) spectroscopies. The largely helical conformations of coat protein in IKE wild-type and mutant virions were found to be very similar by CD, demonstrating that the overall organization of the phage can accommodate a diverse range of amino acid substitutions in the major coat protein. Intrinsic Trp fluorescence showed that the polarity of the Trp 29 environment in the virion was modulated by residues within one helical turn of this locus. Characterization of IKE phage growth

and plaquing properties highlighted the importance of Pro 30 in maintaining viability. As well, the Pro 30 mutants were the only substitutions which rendered the detergent-solubilized coat protein less thermostable and additionally altered the polarity of the Trp 29 environment. The Pro 30 Gly mutant exhibited numerous H-1 and N-15 chemical shift changes between residues lie 25 and hla 38 in the 2D H-1-N-15 HSQC spectrum in myristoyllysophosphatidylglycerol (MPC;) micelles, demonstrating that the effect of the substitution is propagated beyond adjacent residues. The overall results highlight the stabilizing effect of Pro in the first turn of a transmembrane helix and the importance of hydrophobicity in modulating tile oligomerization and stability of coat protein both in the phage and in detergent micelles.

3/7/2 (Item 2 from file: 434)  
DIALOG(R)File 434:Scisearch(R) Cited Ref Sci  
(c) 1998 Inst for Sci Info. All rts. reserv.

15007138 Genuine Article#: VC341 Number of References: 39  
Title: ORIENTATION OF TRYPTOPHAN-26 IN COAT PROTEIN SUBUNITS OF THE  
FILAMENTOUS %%VIRUS%% FF BY POLARIZED %%RAMAN%% MICROSCOPY  
Author(s): TSUBOI M; OVERMAN SA; THOMAS GJ  
Corporate Source: UNIV MISSOURI,SCH BIOL SCI,DIV CELL BIOL & BIOPHYS/KANSAS  
CITY//MO/64110; UNIV MISSOURI,SCH BIOL SCI,DIV CELL BIOL &  
BIOPHYS/KANSAS CITY//MO/64110; IWAKI MEISEI UNIV,DEPT FUNDAMENTAL  
SCI/IWAKI/FUKUSHIMA 970/JAPAN/  
Journal: BIOCHEMISTRY, 1996, V35, N32 (AUG 13), P10403-10410  
ISSN: 0006-2960  
Language: ENGLISH Document Type: ARTICLE  
Abstract: The Ff filamentous virus, which includes the closely related strains fd, fl, and M13, serves as a model for membrane protein assembly and is employed extensively as a cloning vector and vehicle for peptide display. The threadlike virion (approximate to 6 x 880 nm) comprises a single-stranded DNA genome sheathed by approximate to 2700 copies of a 50-residue alpha-helical subunit, the product of viral gene VIII. The pVIII subunit contains a single tryptophan residue (tryptophan-26) which is essential for assembly. We have employed polarized Raman microspectroscopy to determine the orientation of tryptophan-26 in pVIII subunits of oriented fd fibers. The present application is based upon the transfer of tryptophan Raman tensors from a recent study of N-acetyl-L-tryptophan single crystals [Tsuboi et al. (1996) J. Mol. Struct. 379, 43-50]. The polarized Raman spectra of fd indicate that the plane of the indole ring in each pVIII subunit is close to parallel to the virion axis. In this orientation, the line connecting indole ring atoms N1 and C2 is nearly perpendicular to the virion axis, while the indole pseudo-2-fold axis (a line connecting atom C2 to the midpoint of the C5-C6 bond) is approximately 36 degrees from the virion axis. We have used the present results in combination with preferred tryptophan side-chain torsions [chi(1) (C3-C beta-C alpha-N) and chi(2,1) (C2-C3-C beta-C alpha)] in other proteins and a previously determined experimental value of chi(2,1) in fd [Aubrey, K. L., & Thomas, G. J., Jr. (1991) Biophys. J. 60, 1337-1349] to propose a detailed molecular model for the orientation of the tryptophan-26 side chain in the native virus.

3/7/3 (Item 3 from file: 434)  
DIALOG(R)File 434:Scisearch(R) Cited Ref Sci  
(c) 1998 Inst for Sci Info. All rts. reserv.

14827704    Genuine Article#: UP667    Number of References: 35  
Title: SUBUNIT ORIENTATION IN THE FILAMENTOUS VIRUS FF(FD, F1, M13)  
Author(s): OVERMAN SA; TSUBOI M; THOMAS GJ  
Corporate Source: UNIV MISSOURI, SCH BIOL SCI, DIV CELL BIOL & BIOPHYS/KANSAS  
CITY//MO/64110; UNIV MISSOURI, SCH BIOL SCI, DIV CELL BIOL &  
BIOPHYS/KANSAS CITY//MO/64110; IWAKI MEISEI UNIV, DEPT FUNDAMENTAL  
SCI/IWAKI/FUKUSHIMA 970/JAPAN/  
Journal: JOURNAL OF MOLECULAR BIOLOGY, 1996, V259, N3 (JUN 14), P331-336  
ISSN: 0022-2836  
Language: ENGLISH    Document Type: ARTICLE

Abstract: The Ff filamentous viruses (fd, M13, f1) are important models for membrane protein assembly and are used extensively as cloning vectors and vehicles for peptide display. The thread-like virion (approximate to 6 nm x 880 nm) comprises a single-stranded DNA genome sheathed by approximate to 2700 copies of a 50-residue alpha-helical subunit (pVIII). The average inclination of pVIII subunits from the virion axis has been determined experimentally by polarized Raman microspectroscopy of oriented fd fibers, using the amide I Raman tensors obtained from a peptide single crystal. It is found that the average tilt angle, theta, between the pVIII alpha-helix and the virion axis falls within the range  $13 < \theta < 20$  degrees. (C) 1996 Academic Press Limited

3/7/4    (Item 1 from file: 35)  
DIALOG(R) File 35:Dissertation Abstracts Online  
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01089434    ORDER NO: AAD90-02382  
A SURFACE-ENHANCED RAMAN SPECTROSCOPIC STUDY OF %%%ANTIBODY%%%  
/ANTIGEN-BINDING ON SILVER ELECTRODES (SPECTROSCOPY)  
Author: GRABBE, EDITH SZURLEY  
Degree: PH.D.  
Year: 1989  
Corporate Source/Institution: THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL  
HILL (0153)  
DIRECTOR: RICHARD P. BUCK  
Source: VOLUME 50/09-B OF DISSERTATION ABSTRACTS INTERNATIONAL.  
PAGE 3957. 269 PAGES

The techniques of surface enhanced %%%Raman%%% spectroscopy (SERS) and quartz crystal %%%microbalance%%% (QCM) electrogravimetry were evaluated for their capability to sense and characterize an adsorbed layer of immunoglobulins on the surface of a silver electrode. Adsorptive behavior of human immunoglobulin G (IgG) and its antigens was followed as a function of electrode potential, ionic strength and pH of the phosphate buffer solution. The capacity of these two methods to detect the complexes formed during %%%antibody%%%/antigen reactions was investigated. SERS was used to differentiate between smaller, antigen-rich complexes and insoluble, larger %%%antibody%%% -rich precipitates, formed from mixtures with varying concentration ratios of %%%antibody%%% to antigen. SERS experiments were also conducted to assay the selectivity of the method for categorizing various forms of antigen, that were specific to different sites on the IgG molecule, and their %%%antibody%%%/antigen complexes.

The QCM studies confirmed that the immunochemicals adsorbed over the available potential range. Electrochemical reductions of the disulfide bridges of both antigens and %%%antibodies%%% were observed, the latter displaying a simultaneous molecular reorientation and coverage change. This feature was confirmed by SERS results, which gave added information about the specific amino acid residues which were involved in the restructuring

and how they were affected. IgG was found to precipitate the silver ion as the electrode was oxidized, but this could not be monitored with SERS, due to limits in the potential range.

SERS proved capable of distinguishing between large antibody-rich precipitates and smaller antigen-rich complexes. The former were deposited randomly on the electrode surface with low coverage resulting from the large sizes of these complexes and blockage of surface accessibility. The smaller complexes formed compact layers, adsorbed through a few strong bonds. Antigens appeared to have adsorption sites near their antibody binding sites. These areas were greatly affected by antibody binding, which limited availability of adsorption sites. After complexation, the small adsorption area left exposed to the electrode varied greatly between antigens. This feature allowed different types of antigen complexes to be readily identified. SERS could also detect competitive adsorption processes in a reaction mixture and salting out effects.

3/7/5 (Item 1 from file: 654)  
DIALOG(R)File 654:US PAT.FULL.  
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02528641

Utility  
REVERSE ANTIMICROBIAL PEPTIDES  
[Bactericides or fungicides]

PATENT NO.: 5,519,115  
ISSUED: May 21, 1996 (19960521)  
INVENTOR(s): Mapelli, Claudio, Princeton, NJ (New Jersey), US (United States of America)  
Swerdloff, Michael D., Princeton, NJ (New Jersey), US (United States of America)  
Williams, Jon I., Robbinsville, NJ (New Jersey), US (United States of America)  
Everett, Nicholas P., Pennington City, NJ (New Jersey), US (United States of America)  
ASSIGNEE(s): Enichem SpA, (A Non-U.S. Company or Corporation), IT (Italy)  
[Assignee Code(s): 16550]  
APPL. NO.: 8-164,151  
FILED: December 09, 1993 (19931209)

This is a continuation of application Ser. No. 07-649,784 filed Feb. 1, 1991, now abandoned.

FULL TEXT: 4633 lines

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#### ABSTRACT

The present invention relates to several types of antimicrobial peptides including reverse antimicrobial peptides, antimicrobial oligopeptides and other antimicrobial compositions, such as cecropin P1. The present invention also relates to the use of these antimicrobial peptides to provide organisms, and, in particular, plants, with protection from microbial pathogens. Finally, the present invention relates to a screening method which may be useful for determining the phytotoxicity of an antimicrobial peptide.

We claim:

group consisting of Cys, Ser, Ala, Glu, and Thr, and Xaa sup 17 is an amino acid selected from the group consisting of Cys, His, Lys, Arg, and Phe.

8. The compound of claim 1 wherein said peptide has the amino acid sequence of (SEQ ID NO. 13) and functional derivatives thereof.

9. The compound of claim 1 wherein said peptide has the amino acid sequence of (SEQ ID NO. 14) and functional derivatives thereof.

10. The compound of claim 1 wherein said peptide has the amino acid sequence of (SEQ ID NO. 15) and functional derivatives thereof.

11. The compound in any of claims 1 or 2 further comprising a signal peptide, peptide bound to the N-terminus thereof.

12. The composition of claim 1 wherein said reverse antimicrobial peptide is a reverse Magainin.

13. The composition of claim 1 wherein said reverse antimicrobial peptide is a reverse PGL sup c.

14. The composition of claim 1 wherein said reverse antimicrobial peptide is a reverse Pl.

15. The composition of claim 1 wherein said reverse antimicrobial peptide is a reverse Cecropin.

16. The composition of claim 1 wherein said reverse antimicrobial peptide is a reverse Sarcotoxin.

17. The composition of claim 1 wherein said reverse antimicrobial peptide is a reverse Bombinin.

18. The composition of claim 1 wherein said reverse antimicrobial peptide is a reverse XPF.

19. The composition of claim 1 wherein said reverse antimicrobial peptide is a reverse Thionin.

20. The composition of claim 1 wherein said reverse antimicrobial peptide is a reverse Defensin.

21. The composition of claim 1 wherein said reverse antimicrobial peptide is a reverse Melitin.

22. The composition of claim 1 wherein said reverse antimicrobial peptide is a reverse PGL sup a.

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3/7/6 (Item 2 from file: 654)  
DIALOG(R) File 654:US PAT.FULL.  
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02247948

Utility

LIGAND BINDING ASSAY FOR AN ANALYTE USING SURFACE-ENHANCED SCATTERING (SERS) SIGNAL

[ Binding sample to label material which is active for light scattering, then measurement of signal intensity, spectrum analysis]

PATENT NO.: 5,266,498

ISSUED: November 30, 1993 (19931130)  
INVENTOR(s): Tarcha, Peter J., Lake Villa, IL (Illinois), US (United States of America)  
Rohr, Thomas E., Gurnee, IL (Illinois), US (United States of America)  
Cotton, Therese, Ames, IA (Iowa), US (United States of America)  
ASSIGNEE(s): Abbott Laboratories, (A U.S. Company or Corporation ), Abbott Park, IL (Illinois), US (United States of America)  
[Assignee Code(s): 152]  
APPL. NO.: 7-790,106  
FILED: November 07, 1991 (19911107)  
This application is a continuation of application Ser. No. 07-428,230, filed Oct. 27, 1989, now abandoned.

FULL TEXT: 874 lines

#### ABSTRACT

An assay for an analyte in a test sample that uses a ligand binding reaction between the analyte and a specific binding member or a binding member pair that includes one binding member having a Raman active reporter. The analyte can be assayed by measurement of the Raman scattering signal of the Raman-active reporter. The Raman scattering signal can be either a noon-enhanced Raman scattering signal or a Raman scattering signal that is enhanced by a surface capable of enhancing that Raman scattering signal.

We claim:

1. A method for determining the presence or amount of an analyte in a test sample, comprising:

(a) contacting said test sample with an indicator reagent and a capture reagent to form a test mixture; said indicator reagent comprising a Raman active label directly or indirectly attached to a specific binding member wherein said Raman active label comprises at least one Raman active molecule providing a detectable or measurable Raman scattering signal when illuminated by a radiation capable of inducing a Raman scattering, wherein said specific binding member of said indicator reagent is specific for a substance selected from the group consisting of the analyte, the capture reagent and an ancillary specific binding member which specifically binds to said analyte directly or indirectly through one or more additional ancillary specific binding members; said capture reagent comprising a specific binding member directly or indirectly bound or attached to a surface capable of causing surface-enhanced Raman scattering (SERS), wherein said specific binding member of said capture reagent is specific for a substance selected from the group consisting of the analyte and the indicator reagent;

(b) allowing said indicator reagent and said capture reagent to bind to their respective specific binding pair members in said test mixture;

(c) inducing a Raman scattering signal by illuminating said surface with a radiation;

(d) measuring the intensity of said SERS signal resulting from said illumination of said surface; and

(e) determining thereby the presence or amount of analyte in said test sample.

2. The method according to claim 1, wherein said SERS surface is in the form of a textured silver surface.

14. The method according to claim 10, wherein said SERS surface is in the form of a textured silver surface.

15. The method according to claim 10, wherein the test sample is a biological fluid.

16. The method of claim 10, wherein said SERS signal or Raman shift correlates to the presence or quantity of said analyte bound to said capture reagent.

17. The method of claim 10 further comprising the step of separating the unbound indicator reagent from the bound indicator reagent prior to said measuring step.

18. The method of claim 17 wherein the bound and the unbound indicator reagent is separated by physical means.

19. The method of claim 18, wherein said physical means comprises a wash step.

3/7/7 (Item 1 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
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00513064

ORDER fax of complete patent from Dialog SourceOne. See HELP ORDER 348  
Antimicrobial peptides and their use against plant pathogens.  
Antimikrobielle Peptide und ihre Verwendung gegen Pflanzenpathogene.  
Peptides antimicrobiens et leur utilization contre les pathogenes des  
plantes.

PATENT ASSIGNEE:

ISTITUTO GUIDO DONEGANI S.p.A., (456331), 4, Via Fauser, I-28100 Novara,  
(IT), (applicant designated states:  
AT;BE;CH;DE;DK;ES;FR;GB;GR;IT;LI;LU;NL;SE)

INVENTOR:

Mapelli, Claudio, Dr., 107, Delemere Drive, Princeton, New Jersey 08540,  
(US)  
Dugas de Robertis, Catherine, Dr., 213, Wood Mill Dr., Cranbury, New  
Jersey 08512, (US)  
Stahl, Geraldine Frances, Dr., 1006, Lyndale Ave., Trenton, New Jersey  
08629, (US)  
Bascomb, Newell Fred, Dr., 9, Gallo Court, Lawrenceville, New Jersey  
08648, (US)  
Swordloff, Michael Dennis, Dr., 14, Aldgate Court, Princeton, New Jersey  
08540, (US)  
Williams, Jon Ira, Dr., 11, Darvel Drive, Robbinsville, New Jersey 08691,  
(US)  
Everett, Nicholas Paul, Dr., 292J, Burd Road, Pennington City, New Jersey  
08534, (US)

LEGAL REPRESENTATIVE:

Weinhold, Peter, Dr. et al (12857), Patentanwalte Dipl.-Ing. G.  
Dannenberg Dr. P. Weinhold Dr. D. Gudel Dipl.-Ing. S. Schubert Dr. P.  
Barz Siegfriedstrasse 8, W-8000 Munchen 40, (DE)

PATENT (CC, No, Kind, Date): EP 497366 A2 920805 (Basic)  
EP 497366 A3 940209

APPLICATION (CC, No, Date): EP 92101616 920131;

PRIORITY (CC, No, Date): US 649784 910201

DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FR; GB; GR; IT; LI; LU; NL; SE  
INTERNATIONAL PATENT CLASS: C07K-007/06; C07K-007/08; C07K-007/10;

A01N-063/00; C12Q-001/18; A61K-037/02  
CITED PATENTS (EP A): WO 8911290 A; WO 8904371 A; WO 9011770 A; WO 8900194 A; WO 9008552 A

CITED REFERENCES (EP A):

CHEMICAL ABSTRACTS, vol. 98, no. 19, 9 May 1983, Columbus, Ohio, US;  
abstract no. 156135, R.C.HIDER 'Lytic activity of monomeric and  
oligomeric melittin' page 126 ;column 2 ;  
FEBS LETTERS. vol. 247, no. 1, April 1989, AMSTERDAM NL pages 17 - 21  
R.URRUTIA ET AL 'Spontaneous polymerisation of the antibiotic peptide  
magainin-2'  
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peptides that are cecropin-melittin hybrids'  
JOURNAL OF THE AMERICAN CHEMICAL SOCIETY. vol. 101, no. 20, 26 September  
1979, GASTON, PA US pages 6129 - 6131 R.M.FREIDINGER ET AL 'Peptides  
and their Retro Enantiomers are topologically nonidentical'  
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acid-containing channel-forming antibiotic peptides'  
ANGEW.CHEMIE INT.ED. ENGL. vol. 8, no. 7, 1969, pages 492 - 499  
M.M.SHEMYAKIN ET AL 'TOPOCHEMICAL INVESTIGATIONS ON PEPTIDE SYSTEMS'  
BIOCHEMISTRY. vol. 26, no. 3, 1987, EASTON, PA US pages 669 - 675 Y.SHAH  
'ANTI-SENSE PEPTIDE RECOGNITION OF SENSE PEPTIDE';

ABSTRACT EP 497366 A2

The present invention relates to several types of antimicrobial  
peptides including reverse antimicrobial peptides, antimicrobial  
oligopeptides and other antimicrobial compositions, such as cecropin Pl.  
The present invention also relates to the use of these antimicrobial  
peptides to provide organisms, and, in particular, plants, with  
protection from microbial pathogens. Finally, the present invention  
relates to a screening method which may be useful for determining the  
phytotoxicity of an antimicrobial peptide.

ABSTRACT WORD COUNT: 71

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Application: 920805 A2 Published application (Alwith Search Report  
;A2without Search Report)  
Search Report: 940209 A3 Separate publication of the European or  
International search report  
\*Assignee: 940406 A2 Applicant (transfer of rights) (change):  
ENICHEM S.p.A. (719044) Piazza Repubblica, 16  
I-20124 Milano (IT) (applicant designated  
states:  
AT;BE;CH;DE;DK;ES;FR;GB;GR;IT;LI;LU;NL;SE)  
Examination: 940511 A2 Date of filing of request for examination:  
940309  
Examination: 951213 A2 Date of despatch of first examination report:  
951026

LANGUAGE (Publication,Procedural,Application): English; English; English  
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	2104
SPEC A	(English)	EPABF1	41191
Total word count - document A			43295
Total word count - document B			0
Total word count - documents A + B			43295

CLAIMS EP 497366 A3

1. An oligopeptide active against at least one microbial pathogen and



- comprising a plurality of peptide subunits (monomers) including at least one first peptide monomer and at least one second peptide monomer, each of said peptide monomers, the same or different from each other, including an N-terminus and a C-terminus, wherein said at least one first peptide monomer is joined at its C-terminus to the N-terminus of said at least one second peptide monomer by a peptide bond, and wherein said at least one first and said at least one second peptide monomers are active against at least one microbial pathogen.
2. An oligopeptide active against at least one microbial pathogen and comprising a plurality of peptide subunits (monomers) including at least one first peptide monomer and at least one second peptide monomer, each of said peptide monomers, the same or different from each other, including an N-terminus and a C-terminus, wherein said at least one first peptide monomer and said at least one second peptide monomer are joined by a disulfide bond and wherein said at least one first and said at least one second peptide monomers are active against at least one microbial pathogen.
  3. The oligopeptide of claim 2, further comprising at least one other peptide monomer which is bound through a peptide bond to at least one of the amino acid units at which said at least one first and said at least one second peptide monomers are joined.
  4. The oligopeptide of any one of claims 2 and 3, further comprising at least one bridge separating at least one peptide monomer from said disulfide bond.
  5. The oligopeptide of any one of claims 2 to 4, wherein at least one of said peptide monomers is substituted, other than at its N- or C-terminus with a Cys.
  6. The oligopeptide of any one of claims 2 to 5, wherein at least one of said peptide monomers has a Cys at one of its termini.
  7. An oligopeptide active against at least one microbial pathogen and comprising (a) a plurality of peptide subunits (monomers) including at least one first peptide monomer and at least one second peptide monomer, each of said peptide monomers, the same or different from each other, including an N-terminus and a C-terminus, and (b) at least one bridge comprising at least one amino acid, said at least one bridge including an N-terminus and a C-terminus, wherein said N-terminus of said at least one bridge is joined to said C-terminus of said at least one first peptide monomer by a peptide bond and said C-terminus of said at least one bridge is joined to said N-terminus of said at least one second peptide monomer by a peptide bond and wherein said at least one first and said at least one second peptide monomer are active against at least one microbial pathogen; with the proviso that said oligopeptide does not have the structure of Magainin Pre-pro protein.
  8. The oligopeptide of claim 7, further comprising a disulfide bond that traverses at least one of the peptide bonds joining said peptide monomers to said bridge or a disulfide bond which links the bridge to itself.
  9. The oligopeptide of any one of claims 7 and 8, wherein said at least one bridge includes from 1 to 100 amino acids, particularly from 1 to 20 amino acids.
  10. The oligopeptide of any one of claims 7 to 9, wherein said bridge is a single amino acid selected from (see image in original document)
  11. The oligopeptide of claim 10, wherein at least one bridge has the structure of (SEQ ID NO. 5), wherein Xaa(sup 1) through Xaa(sup 5) ~~are each amino acids selected from Gly, Ala, His, Lys, Ser, Arg and~~ Pro and preferably are each Gly.
  12. The oligopeptide of claim 7, wherein said at least one bridge is an omega loop, an extracellular domain of a transmembrane protein or a

- Ser in position 23 is replaced with Pro and having a Met peptide bound to the N-terminal Gly.
31. A process for retarding microbial pathogens, comprising the steps of providing at least one antimicrobial peptide active against at least one microbial pathogen, said antimicrobial peptide being selected from reverse antimicrobial peptides active against at least one microbial pathogen, oligopeptides, P1, PGL( sup(c), Cecropin A, functional derivatives of said antimicrobial peptides, and mixtures thereof, and contacting said at least one microbial pathogen with said at least one antimicrobial peptide.
  32. The process of claim 31 wherein said at least one antimicrobial peptide is active against at least one microbial plant pathogen.
  33. The process of any one of claims 31 and 32, wherein said at least one antimicrobial peptide is provided by topical application thereof to at least one surface of plant tissue, or is provided by expression in a transgenic plant, optionally followed by transport to the extracellular space between plant cells.
  34. A method for screening antimicrobial peptides to determine their relative toxicity, comprising the steps of:
    - intermixing at least one antimicrobial peptide and a solution including cultured whole cells, and determining the change in oxygen consumption by said cultured whole cells.
  35. The method of claim 34 wherein said cultured whole cells are plant cells, preferably protoplasts.

3/7/8 (Item 1 from file: 388)  
 DIALOG(R)File 388:PEDS: Defense Program Summaries  
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#### DEFENSE RESEARCH SCIENCES

Binder: PROGRAM ELEMENT DESCRIPTIVE SUMMARY - FY1989  
 Service: Army  
 Pub. Date: September 22, 1988

#### FY 1989 RDT&E DESCRIPTIVE SUMMARY

Program Element: #0601102A, (#61102A) Service: Army  
 Title: Defense Research Sciences  
 Budget Activity: #1 - Technology Base

Budget Activity: #1 Technology Base

#### A. (U) RESOURCES: (\$ In Thousands)

Project Number	Title	FY 1987 Actual	FY 1988 Estimate	FY 1989 Estimate	Total Program
A31B	Night Vision and Electro-Optics Research	8103	6529	5654	Cont
A71A	Research in Chemical/Biological Warfare				
	Defense	4335	4741	5027	Cont
AF22	Research in Vehicular Mobility	1239	1177	1752	Cont

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\$0.00 0.000 Hrs File765  
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\$0.30 FTSNET  
\$106.31 Estimated cost this search  
\$106.31 Estimated total session cost 0.100 Hrs.  
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